The Bristol Medico-Chirurgical Journal.

"Scire est nescire, nisi id me
Scire alius sciret."

JUNE, 1911.

ON THE RESECTION OF THE POSTERIOR SPINAL NERVE ROOTS.

BY

ERNEST W. HEY GROVES, M.S., F.R.C.S.,
Assistant Surgeon, Bristol General Hospital.

IT is now twenty-three years since Abbé in America and Bennett in London first deliberately divided the posterior nerve roots for intractable pain, yet only about forty cases of the operation for this condition have been recorded, and the procedure has not up till very recent times found a regular place in surgical technic. This is due partly no doubt to the rarity of cases suitable for it, but also to the somewhat equivocal results obtained, and to an exaggerated fear of the gravity of the necessary laminectomy. In only about one-third of these cases was the pain definitely stated to have been cured; in many it returned in a modified or similar degree after an interval of some months, and in several, the condition gave place to insanity, hysteria or morphinism. I have had two cases in which I performed the operation for the relief of pain.

Case 1.—F. H., a clerk, aged 50. Since 1896 he had suffered from tabes dorsalis, with very severe lightning pains in the left leg, and an extreme degree of Charcot's knee-joint. All sorts of therapeutical remedies had been applied without success. On the 16th August, 1909, I resected the last three lumbar and the first three sacral nerve roots on the left side. On the 30th August, 1909, I excised the disorganised knee-joint *without any anæsthetic whatever*, demonstrating the completeness of the analgesia, for the patient was not conscious of any discomfort throughout. The leg healed perfectly, and he can now use it for walking, which he does in the characteristic tabetic manner. But as regards the pain the operation has only been a partial cure, and he often has attacks of gnawing pain.

Case 2.—R. S., aged 39. A married woman with four children. Since 1907 she had severe pain in the left leg following puerperal pyæmia. In 1909 this became so severe that she begged to have the leg amputated. On October 8th, 1909, the posterior roots of the three last lumbar and the first three sacral nerves on the left side were divided. For some few weeks after this she had complete relief from the pain, but after she had returned to her own home the pain returned with renewed intensity, and in April, 1910, she became insane, and had to be removed to the asylum. Within two months both mental condition and complaint of pain became better, and she returned home in October, 1910. Then the same unfortunate sequence of events recurred, first, severe attacks of paroxysmal pain, culminating in insanity in January, 1911, but ever since the operation the leg itself has been completely analgesic.

These cases show very clearly that posterior nerve root division cannot be relied upon for the cure of peripheral pain, which appears to be in many cases of a psychical or central origin.

Cases of Visceral Crises.—In 1908 Professor Foerster, of Breslau, suggested that the crises of tabes were due to an exaggerated reflex mechanism, which might be obviated by the division of the posterior roots concerned. In conjunction with Professor Kuttner, he operated with the most brilliant results upon a tabetic aged 47, who for six years had been subject to severe gastric crises of pain and vomiting. Several other cases of a similar nature have been reported from Germany and America, and in all of these the operation cured the vomiting. Unfortunately my own case was only successful from a physiological point of view.

Case 3.—C. A., aged 34. A labourer. For two years he had suffered from epigastric pain, vomiting and emaciation, which had not been relieved by a gastro-enterostomy. On August 26th, 1910, the seventh to the tenth posterior roots were resected on both sides. This operation cured the pain and vomiting, but his general condition was one of such extreme debility and emaciation that he succumbed suddenly on September 21st after an attack of persistent diarrhœa. The autopsy showed that the operation wound was soundly healed.

There can be no doubt that for severe cases of gastric crises this operation affords the most radical cure that has yet been devised; but on the one hand it should be reserved for the most severe cases after other treatment has failed, and on the other it should be applied before the patient has reached the last stages of emaciation and debility.

Cases of Spastic Paralysis.—It is chiefly owing to the initiative of Professor Foerster that this operation has been applied to the relief of muscular spasm. Spiller and Frazier in America appear to have independently carried out the same idea. The observation which led to this practical result was that the spasm associated with lateral sclerosis disappeared when the posterior columns became involved. From this it was argued that if the cerebral control is cut off from the motor nerves the spinal reflexes produce abnormally strong muscular contractions. A considerable number of cases of spastic paralysis—both paraplegia and Little's disease—have been treated during the last two years by this operation with exceedingly gratifying results. In all cases the spasm has been immediately diminished or abolished, though permanent contractures and paralysis are not directly affected. The following original cases serve to illustrate this group.

Case 4.—L. R., girl, aged 16 on admission. She has had spastic hemiplegia of the type of Little's disease since early infancy. Well nourished and very intelligent. The right arm is held in extreme pronation, and the hand and digits are flexed to such a degree that the tips of the fingers touch the front of the forearm. The least attempt at correction of this deformity results in strong and painful contractions. There is spastic talipes equinus in the right foot. In May, 1910, the median nerve

was forcibly stretched, and a tenotomy done for the right tendo achillis. The leg has been permanently benefited, but the hand, after a very short interval, became as contracted as ever. On December 10th, 1910, the posterior roots of the sixth, seventh, eighth cervical and first dorsal nerves were divided on the right side. The next day, and indeed directly after the operation, the hand was absolutely flaccid, within about ten days the muscles regained some of their tone, but both pain and spasm have never returned. The long-continued contraction had produced so much permanent shortening of the flexor muscles that it was necessary to resect a portion of both bones of the forearm in order to get the hand into its normal attitude. The fingers can now be fully extended by passive movements, but the loss of voluntary movement is as great as ever.

Case 5.—F. P., woman, aged 29. In appearance this was a very similar condition to that described in the last case. She had had a spastic contraction of the left hand and leg since infancy. There was very little actual paralysis, but in the case of the leg any dorsi-flexion of the foot caused a series of painful clonic contractions of the calf muscles, which were so violent as to cause her to fall if walking, and made her cry out in pain. On April 10th, 1911, I divided the alternate roots of all the lumbar and sacral nerves on the left side. She made a good recovery from the operation, but the condition was not improved by it. Strong dorsi-flexion of the foot still causes violent clonus, succeeded by an attack of hysterical weeping. She can walk without being thrown down, but at present there is so much ataxia in the limb that she is not conscious of any benefit. It is possible that this want of success is due to too limited division of the afferent nerve fibres, but I am inclined to attribute it to the fact that the condition is due in a large degree to a functional or psychical hysterical state.

Case 6.—J. C., man, aged 48, with spastic paraplegia of two years' standing. The most notable point about this man's condition was the great pain which was associated with the extreme spasm. The hips and knees were flexed, and the two legs were adducted so strongly that he had to wear pads between the knees and ankles to prevent pressure sores. The same operation was done as in the last case, but here, fortunately, success has been complete. Pain and spasm have been abolished, and after some tenotomies of the adductors and hamstring muscles had been performed, the legs could be put into fully extended and abducted position.

This very short account of my own cases will, I think, serve to show that the operation of resection of the posterior spinal nerve roots is one which (1) is devoid of much risk even

when performed on patients who are very weak and ill; (2) its power of permanently relieving pain is very uncertain, because there is so large an element of psychical causation in chronic pain which cannot be eliminated; (3) it affords the most potent means of stopping the visceral crises of tabes, and will probably prove of great value in this condition if applied to suitably selected cases; (4) it cures muscular spasm associated with disease of the pyramidal tract. The benefit which such cases are likely to derive from the operation will depend upon the degree of paralysis and the absence of hysteria.

In conclusion, I would refer any who are interested in the subject to the report of the meeting of the Surgical Section of the Royal Society of Medicine (June 13th), in which I have given references to all the most important papers dealing with it.

SOME OBSERVATIONS ON SCHOOL HYGIENE.[1]

BY

J. O. SYMES, M.D., D.P.H.

Late Physician to Clifton College; Physician to the Bristol General Hospital.

THE few remarks I purpose making this evening are concerned with the health of children at public and private boarding and day schools, and are in no way applicable to elementary or State-supported schools. In one way the latter class of school has a great advantage, inasmuch as they are subject to periodic medical inspection either by the medical officers of the Local Government Board, or by the medical inspectors of the municipality or county council. There is to my mind equal need of a Government inspection of public and private schools, in order that the drainage, closet accommodation, air-space and dietary may be brought up to a very much higher standard than at present. The children of parents of the middle class should obtain the same care from the State as those whose education is paid for out of public funds.

[1] Read at the meeting of the Society held on April 12th, 1911.

The duties of a school medical officer fall naturally under two heads: firstly, the superintendence of the general hygiene of the school with the view of developing the best possible physical well-being of the pupils; and, secondly, the care of children suffering from ordinary ailments. School authorities attach the greater importance to the second of these duties, and very largely the school medical officer becomes a drudge for small boys and girls suffering from mild minor ailments. The reason for this is that our medical schools make no provision whatever for instruction in the general principles which should guide us in the preservation of health, and the public upon questions relating to food, sleep, exercise, physical culture and mental training look for guidance outside the medical profession, and this part of our work is gradually falling into the hands of irregular practitioners. A very striking instance of this is Sandow's recent appointment as Director of Physical Culture to the King. I am aware, of course, that our own University provides a course of so-called "Hygiene," but this is taken up seriously by but few students, and is occupied with matters which in the ordinary course of things are the care of the plumber, sanitary inspector and engineer. What is needed is a course of instruction in what, for want of a better term, has been styled mechano-therapeutics.

The chief duties of a school medical officer should be the supervision of the drainage and sanitary fittings of the buildings, the regulation of the ventilation and air-space in the class-rooms and dormitories, the arrangement of the dietary, and the hours of work, play and sleep. It should also be his duty to report at the end of every term upon the physical condition of each pupil in exactly the same way as the master reports upon his mental condition. This would entail the taking of careful anthropometric records, and such are already taken in some of the Public Schools.

It is the duty of the medical profession to educate the public to expect school authorities to put physical culture and mental training on an equal scientific basis.

At Clifton College I was able to make a new departure in

the matter of physical training, viz. the introduction of a master whose duty it was to undertake the treatment of physical defects. Each boy on entry presents himself for medical examination, and as a result of that examination a report is sent to his master stating what games he may play and to what extent he is capable of taking part in cross-country runs. Should a boy present any physical defect he was referred for special treatment to the director of physical exercises. The majority of cases so referred were boys with stooping gait, narrow chests or poor respiratory movement. These were all treated in one class, whilst cases of lateral curvature, flat-foot, deformity of chest, old infantile paralysis, asthma, etc., were taken individually for exercises, or for massage, or for both. In girls' schools the custom of providing a mistress trained in physical exercises has existed for some years, but much of the benefit of her services is lost by neglecting the routine initial medical inspection. It is very important that a suitable man be selected for the post of director of physical exercises. He must be efficiently trained not only in gymnastics, but in anatomy and in the elements of medicine; he should have a pleasing personality, and should have the same social status as the other masters. His work should not be entirely confined to the play hours, but should be regarded as part of the usual school curriculum. I may here state that our Grammar School has recently made a notable advance in providing compulsory physical drill for every boy every day in school hours. I have seen the very greatest advantage accrue to boys from the services of the director of physical exercises, and a great improvement in the physique of the school generally follows upon the adoption of open-air Swedish drill, and the gradual elimination of the older gymnasium routine. I believe that such work is essentially the work for a medical man, and that we ought to provide the modern medical student with facilities for acquiring the knowledge and practice of methods of physical culture. We have at hand men qualified to teach this subject, and a new University, such as our own, should incorporate it as a course of postgraduate study.

Sleep.—Most of the Public Schools have recently made an important hygienic improvement in lengthening the hours of sleep. Speaking generally, the juniors should be allowed at least eleven hours and the seniors not less than ten hours in bed. Whilst this relief has been afforded and the actual hours devoted to study have been reduced, there can be no doubt that the pressure put upon the modern schoolboy is greater at the present time than ever before. If a curve of the sickness rate is kept term by term it will be noticed that even in the absence of epidemic disease there is a steady rise after the first two weeks followed by a fall during the last fortnight, when the routine of games and work is somewhat relaxed. I show such curves here this evening. In addition to having compulsory cricket eight or ten times a week, or football three or four times a week, the modern boy has in many instances to do military drills for the territorial service, fagging, swimming baths (summer and winter), fives, racquets, carpentry, singing, music, field club rambles, and attendance on various societies devoted to the discussion of politics, science and other subjects. The lazy or dull boy shirks many of these responsibilities, the keen-spirited boy wears himself out in trying to fulfil them. There is a real danger of a boy getting into mischief if left too long unoccupied, but by multiplying the daily duties we not only sap a boy's nervous strength and physical vigour, but we lessen the chance of his developing upon natural and original lines. Girls at school are given far more leisure than boys, and this is one of the reasons why they keep in much better health, and why their nervous and physical condition is improving more rapidly. Once a boy leaves school and enters the University this strain is removed, for games and hours of work are optional; consequently we see a pale, thin schoolboy converted into a ruddy, well-covered young man by a couple of terms' residence at the 'Varsity.

Food.—Another reason why the physique of schoolboys is unsatisfactory is that the feeding is injudicious. Deficiency of food is practically unknown in good class schools, but the nature of the food and the hours of meals might well be

improved. The substantial meal of the day is dinner, given about one o'clock. After four hours' incarceration in classrooms, and after a visit to the grub shop during break, many boys have a poor appetite for this meal, and even such boys as are hungry hesitate about taking a heavy meal, fearing that their wind may be spoiled for the long afternoon run or game of football. For this reason I have advocated a substantial tea meal about six o'clock, a meal which in addition to the bread and butter, cake and jam served at present shall also include some proteid element such as eggs, fish, fish-cakes, rissoles, brawn, etc. This cannot be done without raising school fees, but most parents would prefer to pay a few pounds extra rather than be called upon to supplement the school tea as at present by a regular system of hampers. These two points that I have touched on, viz. the better regulation of meals and the reduction of the number of hours under school work and games, appear to me to call most urgently for attention at the present time.

With regard to the second division of the medical officer's duties, namely the care of sick children, one cannot fail to be struck by the infrequency amongst Public School boys of those scourges of the poorer classes rheumatism and tuberculosis. Of the many thousands of boys and girls who have passed through my hands during the past twelve years I have not detected one suffering from phthisis, abdominal tuberculosis or tubercular arthritis, and it would be possible to count up on the fingers of one hand the cases of tubercular adenitis.

Of 921 boys who have been under my care, and of whose past medical history I have notes, only 23 (2.5 per cent.) have had any symptoms of articular rheumatism, endocarditis, chorea or other rheumatic manifestation. One could not wish for a more striking demonstration of the fact that both these diseases are almost entirely dependent upon faulty conditions of hygiene.

There are two diseases almost entirely confined to Public Schools, namely epidemic contagious impetigo and tinea cruris. Impetigo, popularly known as "scrum-pox" or "footer-mouth," closely resembles ordinary impetigo, but is peculiar

inasmuch as it is highly contagious and exceedingly rapid in its progress. Starting generally as a slight excoriation on or behind the ears or on the malar bones, series of vesicles form upon the face, these again form a dry, flattened scab around which is a reddened, spreading areola. At the time the disease forms a most unsightly disfiguration, and the stained patches of skin may persist for many weeks after recovery. Rarely does the disease extend to other parts of the body. The disease only appears in epidemic form during the football season, and I have only seen it in those playing Rugby. The early excoriations are caused either by packing in the scrum or are received when tackling; these are infected by the staphylococcus albus and aureus, which assume gradually an increased virulence. Subsequent cases arise by direct contact, or by contact with infected jerseys, towels or sponges. The men in the scrum suffer most, as one would expect. In a small outbreak of thirty-two cases, twenty-five were forwards, one half-back, four three-quarters, and two backs. Widespread epidemics of this disease sometimes occur in Public Schools, and as each case takes from two to three weeks to recover it leads to serious dislocation of school work if the patients are isolated. At first I isolated cases of impetigo, but soon found that boys recovered much quicker if attending school, and that when it was understood that infected persons were not granted sick leave, but were stopped playing football and subjected to somewhat unpleasant regulations, the spread of the disease was immediately stopped, and in the last four years it has never returned in epidemic form. The regulations roughly are the disinfection of all football clothes and of towels, sponges and basins; no towels to be used in common; infected boys to sleep in separate dormitories and use special lavatories; attention to be paid to the slightest abrasion of the skin of the face and hands. The most successful treatment I found to be frequent bathing with antiseptic lotion, and then smearing with an ointment of equal parts of hazeline cream and ung. hyd. ammon. For obstinate and rapidly spreading cases an autogenous vaccine would probably be the quickest remedy.

Tinea cruris (ringworm of the groin and fork) is also a disease of the football season, due to a special fungus akin to tinea megalosporon. As I have recently read and published a paper on this subject I do not purpose saying more; but communications sent to me since the publication of the paper show that this condition is getting a widespread prevalence in Public Schools, the Universities, and the services. It is spread entirely by the use in common of football clothes, towels, sponges and baths.

The infectious diseases are the great bane of school life, and whilst ordinary care should be taken to avoid their introduction, something needs to be done to prevent the wholesale waste of time and energy over futile and unnecessary precautions. For instance, in the case of German measles (roseola), the disease is never serious, and the patient might perfectly well be back at work in a week. There are so many mild unrecognised cases that it is useless to exclude contacts from school, and personally I think the medical profession might agree that this is an ailment of so trivial a nature as to demand no precautions whatever. Then again the code of the Medical Officers of Schools Association insists on disinfection of the person and clothes of children who have suffered or who have been in contact with such diseases as roseola, measles, mumps and whooping cough. This is of course a farce, and a source of trouble and expense to the parents. It would be well if the profession would clearly state that such procedures are useless. In private practice no one insists upon disinfection of persons who have been in contact with these milder epidemic diseases, and few submit patients convalescing from them to any such procedure. It is surely time that school medical officers did away with the restrictions now in force, which spread the belief that infection in these diseases can be conveyed in articles of clothing. Another futile and expensive procedure which might well be modified is the strict isolation of cases of measles, and the long period of quarantine enforced upon contacts. Armstrong has shown that with all the precautions taken only 2 per cent. of Public School boys escape contracting this disease. Whilst one would

not advocate that boys suffering from measles should be allowed to mix with the others, it would, in my opinion, be permissible to abolish altogether the existing rules relating to quarantine, prolonged isolation and disinfection. Under the present arrangement the school routine is frequently upset for the sake of 2 per cent. or less than 2 per cent. of the boys. In connection with measles I should like to draw attention to the value of Koplik's spots in enabling one to detect cases four and even five days before the appearance of the rash. Other prodromal symptoms are slight enlargement of the cervical glands and the appearance of an erythematous rash on the face, neck and trunk on or about the second day. The early detection of cases of measles, whilst it does not limit the spread of infection, yet permits of the patient being put to bed early, and thus prevents many of the complications. Isolated cases of infectious disease, the origin of which cannot be traced and which do not give rise to other cases, are frequent in big schools. I have repeatedly had isolated cases of scarlet fever, chicken-pox and mumps which although they have been in contact with scores of other children yet have infected none. With regard to mumps, I think it should be recognised that parotitis and orchitis of a non-infectious nature are both common in boys at the age of puberty, and I have also seen two cases of acute thyroiditis and mastitis. The parotitis differs from mumps in that it is less painful and is confined to one side. Two out of the four cases of which I have notes had had mumps previously.

Of *albuminuria* in boys I need say very little. It is exceedingly common and bears no relationship to nephritis. It generally occurs in boys who need more out-door life and extra feeding. Of *hæmoglobinuria* after prolonged exertion I have had two cases. Both cleared in a few hours, and no ill-effects followed. It is probably the result of hæmolysis set up by toxins generated by over-exertion.

The most dangerous of all school diseases at the present time is *influenza*. Occurring during the spring term, not only does it dislocate school work by the absence of large numbers

of pupils, but it endangers the life of one or more by the accompanying pneumonia, and leaves long-standing illness by complications such as otitis or cardiac weakness. The distinctive type of each epidemic is well seen in schools. In one epidemic pulmonary symptoms are common, whilst in another nine-tenths of the cases will be gastric or simply febrile. In 1907 epistaxis was a common premonitory symptom, whilst in 1909 enlargement of the cervical glands predominated. I have never had any success in preventing or lessening the incidence of the disease by the routine administration of quinine, but I am confident that the susceptibility of the children could be very much lessened if they led a more rational outdoor life during the Christmas holidays, if at school preparation of lessons before breakfast were abandoned for the winter months, and if greater discrimination were exercised in matters of food and clothing. It is more particularly in the winter that the substantial evening meal is required.

Before concluding there are two matters which I should like to touch upon. The first is the large amount of functional and organic nerve disorder which one finds amongst school children at the present time. Slight cases of epilepsy, tics, cases of periodic depression, of hysteria, and of mental and moral aberration at puberty are of frequent occurrence. It is a mistake to send children of abnormal nervous type to a Public School. They should either be sent as day scholars or be placed in smaller schools, many of which by adopting open-air methods and restricted hours of work are peculiarly favourable to such cases. The other subject I wish to refer to is that of long distance running and over-athleticism. Long runs should, of course, only be indulged in by boys who are physically sound, and who are carefully graduated according to age, size and ability. This is done at Clifton College by a medical examination, and by the selection of the masters and senior boys. I believe that such gradation is efficiently carried out, but with even the greatest care a boy must sometimes run when out of condition or force the pace too much. In this event there results an acute dilatation of the heart with rapid feeble pulse

and signs of syncope. This is of short duration, and in three or four days no trace of the trouble can be discovered. Long runs have the effect of raising the blood-pressure, at first accelerating and then slowing the pulse. Possibly if this be repeated over a number of years it may lead to permanent damage, but I have never seen any ill-effects, and am of opinion that the dangers of over-athleticism have been much exaggerated.

DESIGN FOR AN ELEMENTARY RADIOGRAPHIC CAMERA.

BY

WILLIAM COTTON, M.D.

WHENEVER in systematic clinical work the radiographic centre of the X-ray focus tube is used throughout in some definite relation to the plane of the X-ray picture, then (as was suggested by Mr. Punch now some years ago) whether we know it or not we are employing a kind of X-ray *camera*. Just as in ordinary photography we employ a modification of the long-known "camera obscura," or may in copying drawings employ the "camera lucida" in some form, so in radiography we may quite rationally speak of using a sort of camera, which for want of a better name may be called the "Camera Aperta." The human eye itself is a camera, the comparison of which with other cameras just breaks off when it is becoming most interesting. The object of the present paper is to describe a somewhat more vertebrate type of camera for X-ray purposes than is usually to be found, and to suggest a few purposes for which it must be found highly advantageous or even essential.

The principle involved is that of keeping the radiographic

centre always opposite the middle point or centre—that is, the point of intersection of the two diagonals—of the plate or screen at the time of exposure, while at the same time the radiographic centre is kept free to move to and from the plane of delineation. I first made this suggestion over two years ago.[1] Up to then, as far as I know, the prevailing practice was that of an ordinary photographer, using his swing back or his rising front indiscriminately and at haphazard.

It is curious how far the analogy and homology between ordinary and X-ray photography can be carried. Thus the radiographic centre corresponds with the optical centre of the combination of lenses used, or even more nearly to the pinhole of the pinhole camera. The fluorescent screen is both the ground glass focussing screen and the view finder. The plumb-line often used is analogous to the level. The light tight bag is the dark slide. Both the X-ray and photographic negatives present us, on development, with blackened high lights. The iris diaphragm is used habitually in both arts. Not less curious are some of the differences. In X-ray photography the object is between the plane of delineation and the radiant source, the image on the fluorescent screen and on the X-ray print is erect and reversed, while in the case of the ground glass screen of the photographer's camera the image is direct and inverted; and it is only now beginning to be dimly surmised by the majority of workers that in the matter of form and perspective the X-ray negative alone truly corresponds point for point with the ordinary photographic print or drawing taken from the original station point (in reference to the object and to picture plane) of the radiographic centre itself.

However this may be, in Diagram I I have tried to show the essential parts of a good practical workaday radiographic camera. As regards materials, they must of course be suitably strong, and electrically non-conducting where necessary.

The apparatus consists of *Baseboard*, of *Upright*, and of one or more *Brackets*.

[1] "The Principle of Proportional Representation in Clinical Radiography," *Practitioner*, 1909, lxxxii. 413.

The *Baseboard*, whose centre is marked X, has drawn on it rectangular outlines of half, of whole and of double-plate size, on which to place these plates in their customary light-tight wrappings, x_1 and x_{11} are subsidiary centres laterally placed for stereoscopical purposes; but it is not my present

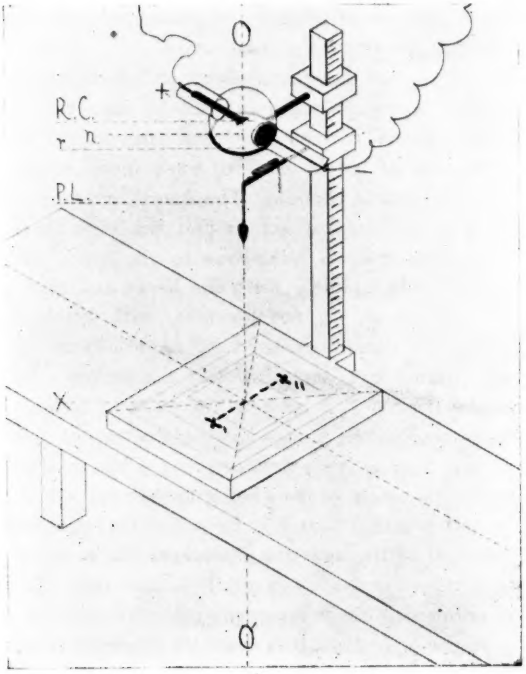

DIAGRAM I.

purpose to do more than allude to stereoscopic modifications in passing.

The *Upright* is solidly and inseparably attached to the end of the Baseboard at right angles thereto, and constitutes the vertebral column of the apparatus. It is convenient to have a scale marked on it of inches or centimetres.

The *Brackets* move freely along the upright as shown, and can be clamped thereon at any point by screws; these screws are not shown, being on the far side. The *lower Bracket* has (at the central end vertically over the point X) a plummet on a string (P. L.). This plumb-line has nothing to do with the centreing of the plate and radiographic centre, but has to do with the centreing and adjustment of the patient along the principal radiographic axis O O′. When the patient lies, or any part of him, across the Baseboard properly orientated, then when the chosen bony point comes under the point of the plummet, we know that the patient or his limbs are as far as possible in identical positions to what we desire, or to what he previously occupied. When the Baseboard is used off the level, then instead of the plumb-line we would require to employ a pointed rod in a sleeve directed along OO′. The lower Bracket can be unshipped, and this must be done, of course, before the X-ray exposure is made. The *upper Bracket* is the essential one. It bears at its inner end a ring-shaped support for the focus tube, parallel to the plane of the Baseboard; the centre of the ring (n) must be accurately adjusted once for all vertically over the point X on the Baseboard. The focus tube is of the spherical bulb pattern now readily procurable, in which the radiographic centre of emission (R.C.) is accurately situated at the centre of this spherical portion. When so manufactured we know that however the tube may be tilted about when seated in the ring support, the radiographic centre must keep its position in O O′ always opposite the centre of the Baseboard, X.

We have thus by structural arrangement of parts secured that R.C. and n and X are permanently in the same straight line O O′, though R.C. can be varied at will in its movements to and fro in regard to the Baseboard. To determine the distance of R.C. from X, we have only to measure directly the distance of the lowest point of the spherical bulb from X, and add thereto the probably known and in any case easily measureable half external diameter of the spherical bulb of the focus tube.

In cases where it is preferred to have the focus tube below the patient and the plate or screen above, some such arrangement as that indicated in Diagram II would be found convenient.

A ready means of determining accurately by one direct measurement the position of the radiographic centre to a known part of the X-ray picture plane must be generally useful. I will now briefly suggest a few special purposes for which it may be employed.

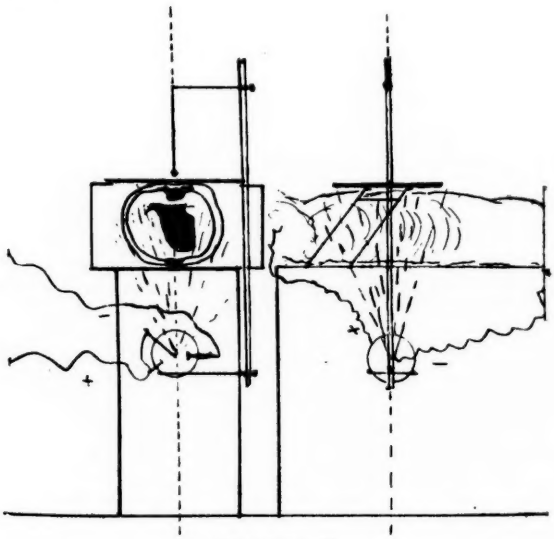

DIAGRAM II.

Firstly, for *Proportional Representation.*[1] If a part of the body twelve inches thick, as measured between conspicuous bony points in a person of large size, be X-rayed for comparison with the corresponding part in another individual ten inches thick, but externally similar, then we cannot be sure from observed dissimilarity of outlines upon the photograph that there is a real

[1] " Proportional Representation," *Archives of the Röntgen Ray.* October, 1910.

dissimilarity or disproportion of internal parts X-rayed, unless the exposures are made at proportional distances of the radiographic centre from the corresponding parts of the plates. If the distance of the radiographic centre (R.C.) from the Baseboard in the first case were eighteen inches, then we should not get a reliable *prima facie* comparison with the smaller person's

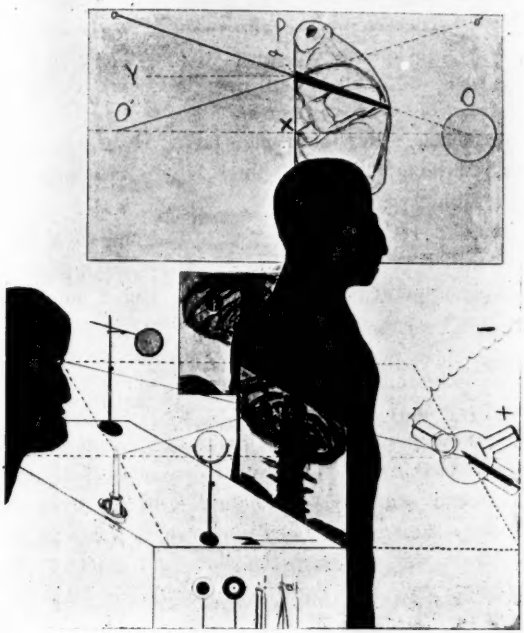

DIAGRAM III.

outlines (or *vice versa*, whichever is taken as the standard) unless the principal distance of the radiographic centre from the centre of the Baseboard were made as nearly as possible fifteen inches, and the same aspect of both patients being of course in contact with the plate or screen.

Secondly, equally important and essential is an exact reproduction of the original position of the radiographic centre by the use of a small luminous flame at a stationary point on the side of the picture plane, remote from but corresponding with the original position in regard to the plate or screen of the radiographic centre at the time of exposure. If the position of the small luminous flame can be thus accurately adjusted, then it will be possible by the use of a small mirror on the surface of the screen or print, or by highly glazing the surface of the print itself, to determine the proper direction to search for a foreign body. When, for instance, the reflection of the small luminous flame is found to fall over the centre of the shadow of the foreign body as seen by the observer, then the eye, the centre of the shadow of the foreign body, and the foreign body itself must all be in line with the original stationary point of the radiographic centre.

In Diagram III a highly-glazed print is actually employed for this method of "centroscopy." In addition are figured some simple apparatus including sights and a small circular plane mirror with a small central perforation, mounted on a holder and suitable for use either with the screen or print. The glass of the mirror ought, of course, to be lead glass.[1]

Lastly, we may usefully imitate for diagnostic purposes the X-ray shadows of an internal organ or a deeply-placed bone by means of visible shadows thrown by a small luminous flame of a model of the organ in question or of a dried bone externally. In this case also an exact knowledge of the original position of the radiographic centre to the plate and object at the time of taking will be found equally advantageous in making an accurate diagnosis.[2]

[1] "The Fluoroscopic Diagnosis of Direction by a Plane Mirror upon the Screen," *Practitioner*, 1911, lxxxvi. 725.

[2] "Radiographic Estimation of Simple Enlargement by Means of Visible Shadows," *Bristol M. Chir. J.*, 1910, xxviii. 226.

THE MEDICAL ASPECT OF BOSWELL'S "LIFE OF JOHNSON," WITH SOME ACCOUNT OF THE MEDICAL MEN MENTIONED IN THAT BOOK.

(*Continued.*)

The Presidential Address, delivered on October 12th, 1910, at the opening of the Thirty-seventh Session of the Bristol Medico-Chirurgical Society.

BY

BERTRAM M. H. ROGERS, M.D., B.Ch., B.A. Oxon.,

Physician to the Bristol Royal Hospital for Sick Children and Women.

I NOW come to the third part of my paper, and propose to give you an account of most of the doctors that are mentioned in the *Life of Johnson*. Johnson took a peculiar pleasure in the company of medical men. This of course is very complimentary to our profession, and he certainly was fortunate in coming across several who were not only skilled physicians, as far as the state of medicine at that time would allow, but were literary men of no mean calibre.

EDMUND HECTOR, the surgeon of Birmingham, was one of Johnson's school-fellows at Lichfield, his earliest friend, and remained so all his life. As young men they both lived for six months with a Mr. Warren, a bookseller, sharing a room. Hector was held by Johnson in great affection, and a correspondence was kept up between them till Johnson's death. He supplied Boswell with many details of Johnson's early life which would otherwise have been lost for ever. He outlived Johnson ten years, and lived to see the publication of Boswell's *Life*.

TOBIAS SMOLLETT'S life is so well known that any lengthy biography of him would be out of place. He was the son of Archibald Smollett, and was born in 1721. When twenty years old he became a ship's surgeon in the Royal Navy, and no doubt the life on board is accurately pictured in his novels.

His fame rests more as a writer than as a member of our profession, and Thackeray describes his work *Humphry Clinker* as "the most laughable story that has ever been written since the goodly art of novel writing began." He died at Leghorn on October 21st, 1771.

Among Johnson's most familiar friends OLIVER GOLDSMITH must take a leading place, for Goldie, as he was affectionately called, was one of the famous Literary Club, of which Johnson was the founder. Though well known, I may perhaps be allowed to spend a few minutes in a short account of this genial but irascible genius. He was born in Ireland in 1729 at Lissoy, which is said to be the original Sweet Auburn, the loveliest village of the plain. Goldsmith did not in his youth display any talents, in fact he was looked on as the dunce of the school, thus confirming Johnson's remark that he was a plant that flowered late. After a few years of idleness at Trinity College, Dublin, he went to Edinburgh, Paris, Germany and Switzerland, finally taking a medical degree at Padua. On his return to London he settled down in Southwark and made some sort of practice. An amusing tale is told of his vanity which is well worth repeating. It was the custom in those days to wear a velvet coat, but Goldsmith not having the means to buy a new one got a second-hand garment. Unfortunately a large patch had to be inserted in front, and was so obvious that to hide it Goldsmith was in the habit of covering it with his hat while visiting his patients. The ludicrous attitude not unnaturally called attention to the very defect that he wished to hide, and resulted in not inconsiderable chaff. In his young days he decided to go to Holland, his intention being to teach English as a means of livelihood, and at the same time to study medicine under Albinus. He appears to have forgotten that a knowledge of Dutch was necessary. He introduces this incident in the *Vicar of Wakefield*, no doubt drawing it from his own experience. Having, however, decided to go he not uncharacteristically booked a passage to Bordeaux. It was a stroke of luck that before the boat sailed he was arrested on suspicion of being a Jacobite, and during the fortnight

that he spent in jail the ship sailed and subsequently foundered. However, he in due time reached Holland, and wrote home an amusing account of his experiences.

The practice of medicine was not a lucrative pursuit to him, and he found literature not only more agreeable but better able to supply his wants. The story of the sale of the *Vicar of Wakefield* is too well known to be repeated, and the success of the play *She Stoops to Conquer* was phenomenal. Unfortunately Boswell and Goldsmith did not hit it off, and Boswell appears to have taken malicious delight in telling any little story to Goldsmith's discredit. There is no doubt that he was hasty in temper, vain in person, (though pitted with small-pox), and improvident in habits, but for all that he must have been an extremely attractive and lovable person. Johnson had the highest opinion of his literary abilities, for in writing Goldsmith's epitaph for the monument in Westminster Abbey he used the phrase "Nullum quod tetigit non ornavit."

ROBERT LEVETT, died 1782, was a member of the queer household that Johnson collected together, and possibly no one of them was more strange than this man, who had a practice "in physic amongst the lower people" from Marylebone to Houndsditch. He began life as waiter in a Parisian coffee-house, and making the acquaintance of the surgeons who frequented the place, he took a liking for surgery. His friends had obtained for him permission to attend the lectures under the ablest professors. Why Johnson took him into his house no reason is ever given, but he lived there for thirty-six years, dying a few years before Johnson. His patron had a great regard for him though he said, "Levett is a brutal fellow, but I have good regard for him, for his brutality is in his manners, not in his mind." This comes well from a person who, to put it mildly, was not over refined in his habits. When Levett died Johnson composed a poem on him, and remarked that thus "ended the long life of a very useful and very blameless man."

SAMUEL SWINFEN was Johnson's godfather and father of Mrs. Demoulines, another member of Johnson's household. He is probably the first doctor that Johnson ever consulted

for his melancholia, and the result was most unfortunate. Johnson, then quite a young man, wrote his symptoms in Latin, and Swinfen was so struck with the acuteness, research, and eloquence of the letter that he so far forgot the obligation of medical secrecy that he showed the letter to his friends. Johnson was not unnaturally very hurt at this breach of confidence, and never quite forgave Swinfen, though he housed Mrs. Demoulines, Swinfen's daughter, for many years. Swinfen was a graduate of Pembroke College, Oxford, and it is supposed that he interested himself in Johnson going there.

John Coakley Lettsom (1744–1815) the celebrated Quaker doctor, born on the island of Little Vandyke, one of the West Indies, in 1744, came to England at the age of six, and was placed under the care of Mr. Fothergill, the brother of the celebrated London physician. After serving an apprenticeship in Yorkshire, he came to London for two years, and returned to his property in Vandyke. His first act was to free all his slaves, a generous deed which rendered him penniless, but after a few years he saved enough from his practice to be able to return to England. Under the patronage of the Society of Friends he soon began to make his way, and with the further assistance of a wife with ample means he was " in a position to command success." Johnson made his acquaintance at a dinner party at Mr. Dilly's the bookseller. This was rather a momentous dinner party. In the first place, Johnson nearly forgot it, in fact he would have done so if Boswell had not called for him; secondly, Johnson put on a clean shirt, a proceeding of which we are told in his own words he was not too fond; and thirdly, the great John Wilkes was there. Wilkes was one of Johnson's detestations, he was the incarnation of all that was vile and wicked, and Johnson, as a Tory, would have coupled his name with that of the father of lies. Fortunately Wilkes said nothing and did nothing that could offend Johnson, in fact very much the other way, for by carefully attending to Johnson's wants at dinner, " a little of the brown—some fat, sir—a little of the stuffing—some gravy—let me have the pleasure of giving you some butter," and so on, he quite got

round Johnson, who delighted in the good things of the table. "Sir, sir, I am obliged to you, sir." Lettsom's memory is kept green by the annual lecture at the College of Physicians of London. He died on November 1st, 1815.

His well-known epigram is worth repeating:—

"Whenever patients come to me
I physics, bleeds and sweats 'em
If after that they choose to die
What 's that to I—I. Lettsom."

I feel that some sort of apology is needed for introducing the name of Dr. RADCLIFFE among my list of doctors, for the only reference to him is in a remark of Johnson's on the travelling fellowships that he had founded in the University of Oxford, one of the many benefactions that he bestowed on the University. Johnson's comment on the fellowships gives a suggestion that has been more energetically followed out of recent years, "that they would be of more value if the study of disease abroad among the native races of the world, rather than the personal intellectual advancement of the fortunate recipient of the fellowship, had been their object." He said, "It is wonderful how little good Radcliffe's travelling fellowships have done. I know nothing that has been imported by them. Yet many additions to our medical knowledge might be got in foreign countries. Inoculation, for instance, has saved more lives than war destroys, and the cures performed by Peruvian bark are innumerable; but it is in vain to send our travelling physicians to France and Italy and Germany, for all that is known there is known here. I 'd send them out of Christendom. I 'd send them among barbarous nations."

Dr. Radcliffe was born in 1650 at Wakefield, of humble parentage, and entered the University of Oxford in 1665. His medical knowledge is said to have been of the smallest, but for all that he rapidly gained a reputation as a physician in Oxford. In 1684 he removed to London, and soon established himself there, partly owing to the disfavour that Lower had acquired from espousing the Whig cause. Royal favour soon shone on him, and William III consulted him; but when

Queen Mary died of small-pox her death was, according to Bishop Burnett, attributed to want of skill and neglect on Radcliffe's part. This is, I believe, an unjust accusation, for the Queen, when Radcliffe was called in, was dying. His remark to the dropsical king calls for repetition only, "I would not have your two legs for your three kingdoms," and not unnaturally lost him his Court favour.

Radcliffe, whatever his medical abilities may have been—and Mead bears witness to his penetration and experience—was a successful man, and much in consequence may be forgiven him. All Oxford men will applaud the noble use he made of his wealth, for the Library, the Infirmary, the Observatory, the small quadrangle in University College and the window in its Chapel, are such additions to the University as no other single person can claim. Little wonder then that the University gave him a splendid funeral and burial after a four weeks' lying-in-state. It is curious that no monument or even stone to mark his grave was put in St. Mary's Church till one hundred and sixteen years after his death, though there was a Radcliffe sermon preached in Commemoration week till 1863, when it was abolished.

Radcliffe, when he became a person of position, attempted to trace his ancestors back to some illustrious persons of the same name, but the Heralds' College interfered, and after the doctor's death admonished the University of Oxford not to erect any escutcheon over or upon his monument. It seems as though the University, to save any dispute, solved the difficulty by erecting no monument at all.

Dr. John Rutty was a Quaker of Dublin. There is no particular interest in this otherwise unknown person except that he kept a record of his own shortcomings, an unusual proceeding, for writers as a rule prefer to perpetuate the failings of others. The examples we have are:—

"A hypochondriac obnubilation from wind and indigestion."

"An overdose of whisky," followed by the next day's record or sequel—"dull, cross and choleric day."

"A little swinish at dinner."

"Sinfully dogged."

These self-analytical remarks were made in a book called "Spiritual Diary and Soliloquies."

MESSENGER MOUNSEY (1693–1788) was not a favourite of Johnson's, as he "swore and talked bawdy," as well as being a Whig in politics, a friend of Sir Robert Walpole and Lord Chesterfield, and a Unitarian. He appears to have been a very eccentric person, and quite unable to follow the advances that medicine made in those days, for he adhered to the tenets of the school of the celebrated Dutchman Boerhaave, which had been in vogue and were out of date for some years. He was educated at St. Mary's Hall, Cambridge, and practised in Bury St. Edmunds, but left there on his appointment as physician to the Chelsea Hospital. He left his body for dissection, and this Mr. Foster carried out. I believe that the terms of his will were carried out to the letter, and the mangled remains thrown into the Thames.

Mounsey's epitaph, written by himself:—

"Here lie my old bones: my vexation now ends:
I have lived much too long for myself and my friends.
As to churches and churchyards, which men may call holy,
'Tis a rank piece of priest-craft, and founded on folly.
What the next world may be never troubled my pate:
And be what it may, I beseech you, O Fate,
When the bodies of millions rise up in a riot,
To let the old carcase of Mounsey be quiet."

THOMAS LAWRENCE (1711–83) entered Trinity College, Oxford, in 1727, and subsequently went to St. Thomas's Hospital. On the resignation of Dr. Nicholls he was appointed Lee Reader in Anatomy in the University of Oxford. Later he migrated to London, and became President of the College of Physicians, which post he held for seven years. Johnson was among his patients, and was, evidently undeterred by his previous experience with Dr. Swinfen, in the habit of writing his symptons in Latin to him, clearly a habit we must not encourage among our patients. Munk, in his book on the College of

Physicians, says: "Few men have been more respected by the College, none probably by their attainments were better qualified for practice, than Dr. Lawrence. Yet as a physician he made but little progress. He was an elegant classical scholar, a good anatomist, and a sound practitioner, but in his endeavours to attain eminence it was his misfortune to fail." It seems that his personal defects and habits stood in the way, for he had "a vacuity of countenance very unfavourable to an opinion of his learning or sagacity, and certain convulsive motions of his head and shoulders gave pain to the beholders, and drew off attention from all that he said."

In the latter part of his life he became very deaf, and Johnson declared, "I have lost the conversation of a learned, intelligent and communicative companion, and a friend whom long familiarity has much endeared. Lawrence is one of the best men whom I have known."

He died in 1783 at Canterbury, where he had retired a year previously, having become paralysed. An inscription of thirty lines, detailing his excellencies, was engraved on a tablet in the Cathedral.

William Heberden (1710–1801) was one of the physicians who attended Johnson in his last illness. He was a Londoner by birth, and was educated at St. John's College, Cambridge, in which town he began practice, at the same time lecturing on Materia Medica. In 1745 he was a candidate at the College of Physicians, and became a Fellow in the following year. Heberden was probably one of the most advanced physicians of the time, recognising what was good in the old, and adopting the newer methods that were coming into practice. As an instance I may mention his treatise *Antitheriaca*, in which he attacked the exceedingly complex mess of drugs that had come into vogue, or which it had gradually become the practice to employ. The particular one that his sally was made against was that known as "Theriaca," the formula of which had been handed down from the Middle Ages on a recipe said to have been composed by Mithridates, King of Pontus, as a specific against all forms of poison. The original prescription contained thirty-eight

ingredients, which in the course of ages had grown to fifty-three, and finally reached seventy-five. He was one of the first to encourage clinical medicine, making voluminous notes of his cases both at the bedside and on his return home. Moore says that the publication of these notes after Heberden's death was of the greatest value, and the reading of them even now is illuminating. Though one of the leading men of his time and an eminent Fellow of the College, he never became President; but whether this was due to his modesty or not I cannot tell. He, however, refused the post of physician to George III. From the accounts that exist of him he appears to have been a person of great personal charm, and his works were so highly thought of that they were translated into German, then as now a rare honour.

WILLIAM CULLEN (1712–90) was born of humble parentage in Lanarkshire, and in early life was a barber. After being an apothecary he studied medicine, acted as a ship's surgeon, and began practice in Scholes, and later in Hamilton. Here he became acquainted with William Hunter, and the two practised in partnership. In order to improve their medical knowledge they agreed that one should carry on the practice while the other went to Edinburgh for the winter session. Cullen was in 1746 elected Professor of Chemistry in Glasgow College, and a few years later Professor of Medicine. In 1756 he returned to chemistry, and was professor at Edinburgh, and then again took to medicine, being made professor at the same University. I have already mentioned Cullen when speaking about the various systems of medicine, and most probably he was a man in advance of his times. As an author his books were in great request, and thought so highly of that they were translated into several foreign languages. He was a man of much charity, and supported Burns's widow, and published his poems at his own cost. He was one of the doctors before whom Johnson asked Boswell to lay his case.

WILLIAM CRUIKSHANK (1745–1800) was the surgeon whom Johnson called in with Pott to treat him when he suffered from sarcocele. Johnson recommended him for the post of

Professor of Anatomy at the Royal Academy, vacant by the death of William Hunter. Cruikshank is said to have been the discoverer of urea.

JOHN ARMSTRONG (1709–79) was the author of a book, *The Art of Preserving Health.* He was a Scotchman, and a friend of Thomson the poet. He gives one of the earliest descriptions of enteric fever, which he treated with copious bleeding and stimulants. He was a poet of no mean order, though I do not expect his effusions are much read now.

GEORGE CHEYNE (1671–1743), before mentioned as the author of the book *The English Malady,* was a Scotch M.D., and is not mentioned in Munk's Roll. He was born in Aberdeen, and migrated to London in 1702. Johnson recommended the book to Boswell, who had complained of fits of depression, and added the shrewd remark, " Do not let him teach you a foolish notion, that melancholia is a proof of acuteness."

SIR EDWARD BARRY, Bart. The only reference to this distinguished Irish physician occurs in a conversation between Johnson and Boswell. Barry had brought out a theory that pulsation caused death by attrition, and that the way to prolong life was therefore to retard pulsation. Johnson was scornful of this suggestion, arguing that as pulsation was strongest in infants, it cannot be the cause of destruction. Barry was a Dublin physician, and was created an M.D. of Oxford, and admitted a candidate of the College of Physicians of London. He was Physician-General to the forces in Ireland, and Professor of Physic in the University of Dublin.

SIR CHARLES BLAGDEN (1748–1820), was a physician and Secretary to the Royal Society. Munk does not mention him, so he was not a member of the College of Physicians. Johnson describes him as a delightful fellow.

SIR WILLIAM BUTTER (1726–1805) was one of the physicians who attended Johnson in his last illness, and was left a legacy by his patient. He came from the Orkneys, and was an M.D. of Edinburgh. Johnson and Boswell met him at Derby, where he was in practice before he came to London. They took tea with him at his house, and visited the china works. He, like

the other doctors who looked after Johnson, took no fees from him.

RICHARD WARREN (1731—97) was another of Johnson's medical advisers, but in his case no mention is made in the will of a bequest. He was the son of Archdeacon Richard Warren, and was educated at Bury St. Edmunds and Jesus College, Cambridge. He was much in favour at Court as physician to the Princess Amelia. He was one of the first to break through the formalities that were used among the physicians of that time, formalities which rendered medicine the favourite theme of ridicule with the wits who happened to enjoy good health.

There is one little anecdote connected with our profession which must be told, for it illustrates the extreme touchiness of the medical men of those days over their titles. This sensitiveness has not quite disappeared, and few of us would bring an action at law, with the usual worry and expense, if someone styled us Doctor of Medicine rather than Physician. This was the reason of Dr. MENIS's action against the Royal Infirmary of Aberdeen, for in a translation of the Charter of that Institution from Latin to English, the same phrase in the original was in one place rendered "Physician," while in another, when referring to Dr. Menis, was translated "Doctor of Medicine." The aggrieved party could not get the translation altered, so sued the managers of the Infirmary for damages on account of the supposed injury, holding that the designation was an inferior one, and suggesting that he was not a physician. Boswell's father, one of the Scotch judges, had dismissed the case as groundless, and Boswell had been retained by the managers of the Infirmary as their advocate. The finding did not please Menis, and he appealed for a re-trial. Boswell wrote to Johnson to ask his aid, and no doubt the opinion of the profession in England. Johnson wrote to Lawrence, at that time President of the College of Physicians, whose opinion was that the title of "Doctor of Medicine (or Physic) was the highest that a practiser of physic could have, and implied that he was a physician and a teacher of physic, and that every doctor was legally a physician." Dr. Menis lost his case on the appeal, and had to

pay £40 costs. Boswell's comments are curious for an advocate for the respondent, for he argues in Menis's favour, and holds that the court judged wrong, the respondent being in *malafide* to persist in naming Menis in a manner he disliked. It seems that the question of damage that the offence had done his practice or his reputation was not discussed, though this was the real point upon which he based his action.

WALTER SHEBBEARE (1709–88) is described as a Bristol doctor, though as far as I can discover his only connection with this city is that he wrote a book on the Hotwell, then rapidly becoming popular as a cure for diabetes and consumption. If he was one of us we have no great cause to be proud of him, though perhaps his faults lay in belonging to the unpopular political party. He certainly suffered for his opinions, as he was fined, imprisoned, and put in the pillory for a political libel, called *Sixth Letter to the People of England*, 1758. This pillorying was in his case not such a serious affair as was usually so, for owing to some friendliness on the part of the sheriff he was allowed to stand on, instead of in, the pillory, as well as to enjoy other indulgencies. The fact that he was a strong Tory recommended him to Johnson, who did not mind his name being coupled with Shebbeare's. His faults seem to have been overlooked by a benevolent Government—perhaps the Tories were in power—for he received a pension and defended George III 's American policy, one which I may remind you lost us what are now the United States.

RICHARD GREEN, of Lichfield, was a relative of Johnson and he attended Lucy Porter, Johnson's stepdaughter. He was an apothecary, and made a museum at Lichfield full of all sorts of oddities and a few valuables. Some of the armour from it is now in the Tower. Johnson entrusted him with the duty of placing an epitaph on the tombstone of his father and mother in St. Michael's Church, Lichfield.

RICHARD BROCKLESBURY (1722–97) was the son of an Irishman of Cork, but was born at Minehead. He studied medicine in Edinburgh and Leyden, of which latter University he was an M.D., though subsequently he was created M.D. of

Cambridge and Dublin. In the College of Physicians he held most of the posts, but did not become President. In 1758 he was appointed physician to the army, and served for some time in Germany in the Seven Years' War, and later he was appointed physician to the hospital for the British forces.

He was Johnson's regular doctor, and attended him in his last illness, with several others. He appears to have been a man of a most generous nature, and on one occasion lent Burke, who was in low water, £1,000 which he had bequeathed to him in his will, and he offered to give Johnson £100 a year for life when the Lord-Chancellor, Lord Thurloe, had refused to increase Johnson's pension.

BENJAMIN HOADLEY'S (1705–57) chief claim to be recorded in this paper is that he referred to Johnson as the "Puffy Pensioner." He was the son of a well-known bishop of the same name, and was educated at Corpus Christi College, Cambridge. He was for many years Physician to St. George's Hospital, and in 1742 to the King's Household.

RICHARD MEAD (1673–1754) was the son of a Nonconformist divine, the Rev. Matthew Mead. His education was mostly received abroad at Utrecht and Leyden, at which latter place he was a fellow-student of Boerhaave. Later he travelled in Italy and graduated at Padua, the English Universities being of course closed to Nonconformists. He started practice in Stepney, then a more salubrious neighbourhood than at present, and a book published by him, *The Mechanical Account of Poisons*, brought him fame. He was appointed Physician to St. Thomas's Hospital, and on the death of Dr. Radcliffe moved to his house in Bloomsbury Square, succeeding to much of his practice. Mead was the Prince of Medicine as far as success is concerned, for no man before or since has ever reached the position he held. Johnson said of him that he "lived more in the broad sunshine of life than almost any man." Apart from his profession he was a great collector of books, statuary, coins, gems, prints and drawings, his house was open to all, his purse free to everyone, for he held that what he received from the public he ought to bestow for their advancement.

Perhaps his most worthy act was to persuade the miser bookseller, Guy, to found the hospital known now and for all time as Guy's.

THOMAS NANNINGHAM, Kt., and son of a knight of the same name, was an M.D. of St. Andrew's, who practised in Jermyn Street, and later at Bath. Johnson met him at Keddlestone in 1777. He, with Smellie and William Hunter, was one of the first physicians to practise midwifery, which had till then been mostly in the hands of ignorant midwives, and to raise that branch of our profession to a dignified position. Nanningham established a lying-in ward in the St. James' Parochial Infirmary, Westminster, in 1739, that being the first of its kind in the United Kingdom.

I regret that I am unable to find much information about DR. MARTIN WARD, of Oxford. He was the son of a Dr. Ward, of Worcester, one, if not the sole, founder of the Worcester China Works, and was educated at Winchester and New College, Oxford. His medical training he had at St. Bartholomew's and Edinburgh. He practised in Oxford, and after being Reader—I presume Lee—in Chemistry, he was appointed Lichfield Professor of Clinical Medicine. He died in 1824. Dr. Johnson had " a peculiar pleasure in the company of physicians, which was not abated by the conversation of this learned and pleasing gentleman." It was to Dr. Ward that Johnson made the remark about the Radcliffe Travelling Fellows.

SIR JOHN HILL (1716–75) is said to have been a quack, but I cannot get much information about him. George III asked Johnson his opinion of him, and the criticism appears not to have been favourable.

ROBERT JAMES (1703–76) was born at Kinveston in Staffordshire, was a schoolfellow of Johnson's, and always a friend. He seems to have divided his medical attentions between Sheffield, Lichfield, Birmingham and London. He was at St. John's College, Oxford, but was an M.D. of Cambridge by royal mandate. His chief claim to fame lies in his celebrated fever powders, and in his book on the history of drugs, in the compilation of which it is said that Johnson gave a hand.

Johnson was much attached to him, and had a high opinion of his powers: "No man brings more mind to his profession." Munk says that he tarnished the fair name he might otherwise have obtained by patenting his powders and falsifying their specifications. His dissertation on fevers ran to eight editions.

I am unable to find who NUGENT was, but there was a friend of Johnson's of that name, an original member of the Literary Club. When on the tour to the Hebrides with Boswell they amused themselves one day by making appointments to an imaginary University of Skye, and Nugent was selected to teach Physic. There is in Munk a Christopher of that name who died in 1775.

ALEXANDER DICK, Kt. (1703–85), was one of the leading physicians of Edinburgh, and was invited by Boswell to meet Johnson at dinner in that city just before the tour to the Hebrides. They also dined with him on their return. It was no doubt the friendship thus formed that induced Johnson to ask Boswell to lay his case before Sir Alexander when his last illness was upon him. In return, as we have seen, the packet of rhubarb which Dick had grown in his own garden was sent. Sir Alexander had previously been presented with a gold medal for the best specimen of this drug by the Society of London for the Encouragement of Arts and Manufactures and Commerce. He was at this time eighty-one years old, and had served as President of the College of Physicians of Edinburgh.

DR. GILLESPIE was another of the Edinburgh physicians whom Boswell consulted on Johnson's case, and from this one Johnson received "an excellent *consilium medicum*, all solid practical experimental knowledge." Boswell's father thought so highly of Dr. Gillespie that he settled £200 for five years and £50 during his (Boswell Senior's) life on him as an honorarium to secure his particular attendance.

GEORGE FORDYCE (1736–1802) was one of the original members of the Literary Club. He was an M.D. of Edinburgh, and for some time before he migrated to London lectured on Materia Medica in that University. He became a Physician to St. Thomas's Hospital, and with John Hunter founded the

Society for the Improvement of Medical and Chirurgical Knowledge and the London Medical Lyceum.

JOSEPH NATHANIEL FORD was brother to Johnson's mother. Perhaps he is more celebrated as the father of Parson Ford, "licentious parson," whose ghost was supposed to have been seen at the Hummums—a place where people got themselves cupped. Johnson's wife went to inquire about it, and satisfied herself of the truth of the story. Johnson's belief was that the man who saw it was suffering from a fever at the time, and imagined it.

MARK AKENSIDE (1721–70) is known better as a poet than as a doctor. He was the son of a butcher of Newcastle, studied medicine at Edinburgh, but was not successful in practice in London, though Physician to St. Thomas's and Harveian Orator. He received some injury in youth that crippled him. Johnson had a high opinion of him as a poet, and included him in his *Lives of the Poets*. One sentence may be quoted, "A physician in a great city seems to be the plaything of fortune, his degree of reputation is for the most part casual, they that employ him know not his excellencies, they that reject him know not his deficiencies.

Another of the doctors of Edinburgh to whom Johnson had his case put was ALEXANDER MUNRO. As you are all aware, there were three generations of this name who at different times held the post of Professor of Anatomy in that city. The one that Johnson must have consulted was the second of that name, a greater light in the anatomical world than his father. I believe he is the man after whom the foramen is named. He succeeded his father at the age of twenty-one, and lectured for fifty years. The three Munros lectured continuously for one hundred and twenty-six years.

SAMUEL MUSGRAVE (1732–80) was an M.D. of Leyden, and was born at Washfield in Devon. He was entered at Christ Church, Oxford, and obtained a Radcliffe Travelling Fellowship, and spent several years on the Continent, in Holland and France. On his return he settled in Exeter, but moved later to Plymouth. He got mixed up in some political questions

which are too long and too intricate to go into here, but made some statements that he was not able to substantiate and hence got into bad odour. He removed to London, but was not successful as a practitioner, and lived chiefly by writing. He is said to have been an extremely good Greek scholar, but when he read a poem of his composition to Johnson he had to suffer an unfavourable criticism.

JOHN TURTON (1736–1806) was another Radcliffe Travelling Fellow, and on commencing practice was very successful, holding several Court appointments. It was he who attended Goldsmith when dying, and said to him, "Your pulse is in greater disorder than it should be from the degree of fever which you have. Is your mind at ease?" Goldsmith's answer was, "No, it is not."

When Johnson was threatened with a surgical operation it was PERCIVAL POTT who was called in for consultation, and I have told how his services were after all not required. Pott was born in 1713 in London, and at an early age expressed his wish to become a surgeon. He was apprenticed to a Mr. Nourse, one of the surgeons of Bart's., and was there employed in getting ready the subjects for his chief's lectures on anatomy, as well as in attending at the hospital. The condition of surgery at that time was very deplorable, "the art was miserable, the instruments were clumsy and unmanageable, the operations unscientific, and unnecessarily painful, the established mode of practice, encumbered with a farrago of useless medicines and applications, tended rather to mislead than direct the inquirer, prescriptions too frequently held the place of reason, and want of real knowledge was concealed under a pompous garb and specious demeanour." This is the picture that surgery then presented when Pott began work. In 1736 he, having finished his apprenticeship, took a house in Fenchurch Street, and eight years later he was appointed surgeon to Bart's., and he at once began to remedy some of the old cruel and useless methods. I cannot omit the story, though possibly well known to many of you, of how he came to study the particular fracture that is still known by his name. One day in January, 1756, while riding in Kent Street, Southwark, he was thrown from

his horse and had his leg fractured, the bone coming through the skin. Knowing the dangers of these injuries, he refused to be moved, and sent to Westminster for two chairmen to bring their poles. While waiting he purchased a door, and when the men came he had the poles nailed to the door, and himself placed on the improvised stretcher. In this way he was carried to Watling Street, where he then lived, and on a consultation it was decided to amputate his leg. Fortunately his old chief came in at the opportune moment and dissuaded the surgeons from this, and the leg was saved. During the time that Pott was necessarily laid up he discovered that he could write, and it is said that the first accurate account of the fracture known by his name was worked out while he was in bed. He resigned his post at Bart's. in 1787, and died the following year from pneumonia. His last words were, " My lamp is almost extinguished, I hope that it has burned for the benefit of others."

HERMANN BOERHAAVE (1668–1738) was the most famous physician of the eighteenth century. He was the son of a Dutch pastor of Voorhout, near Leyden, at which latter place he began to practise in 1693. He was a man of extraordinary powers, but the part of his career that most interests us is the power he had of clinical instruction. He was a most voluminous writer, and enjoyed a more than European reputation. It is said that a letter sent from China addressed " to the most famous physician of Europe " reached him. He died in 1738 of gout. It is impossible in a paper such as this to give any account of the theories of medicine that Boerhaave introduced, but they may be summed up as follows : Disease was the condition in which the bodily actions were disturbed or unsettled, and take place only with difficulty ; fever was an effort to ward off death. He was the first to use the clinical thermometer, and the lens for the examination of the eye, as well as the first to permanently establish clinical teaching.

The University of Leyden owes a great deal to Boerhaave, for it was in great measure to his reputation that the medical school became so popular. Goldsmith, who was there some years later did not think that medicine was so well taught

as in Edinburgh, and the absence of English students he ascribes to the dearness of necessaries and the laziness of the professors.

SIR JOHN FLOYER (1649–1734) was a relative of Johnson's mother, and it was on his recommendation that the infant Johnson was taken to Queen Anne to be touched for the King's Evil. He practised at Lichfield, and appears to have been a man of some repute. His chief work lay in observations on the pulse and its relation to the respiration. He also wrote on the use of hot, cold, and temperate baths in England, and ascribed the prevalence of rickets to the custom of only sprinkling infants in baptism and not plunging them into water. He also wrote a book on asthma, which it appears Johnson had read, for he says that Floyer, himself a sufferer from that disease, "panted on to 90," so that he (Johnson) concluded that his, though "constitutional and incurable," and not laying "close siege on life," would not shorten his days. In a later letter he says that Floyer's asthma was not of the same kind as his own, but the book is obscure by want of order.

GIOVANNI BAPTISTE MORGAGNI was one of the numerous Italian physicians who shine so prominently at this period of history. He was born at Forti in 1682, and took his M.D. at Bologna at the age of 16, being assistant to Valsalva. For a very great number of years he was Professor of Anatomy at Padua, and did much to raise the school of medicine there to the pitch of eminence that it reached in the eighteenth century. He was also distinguished as a literary man and an antiquarian. He died in 1771.

When Johnson and Boswell visited this city in 1776 they went to see St. Mary Redcliffe and the room where Chatterton alleged that he found the Rowley manuscripts. This was after the death of Chatterton (1770) and the exposure of the fictitious character of his poems, or rather of the source of his tales. The part that interests us is that the two visitors went to call on Barrett, the Bristol surgeon, who it is always said was completely taken in by the youth, and put in his *History of*

Bristol some of the tales. Quite recently a book has been published on Chatterton by Mr. Ingram, who takes an entirely new view of the part that Barrett played in the tragic comedy. Mr. Ingram's view is that Barrett was not the dupe that everyone has always taken him to be, but was, if not the instigator, at least a willing accomplice. He alleges that Barrett connived with his young friend in connection with the famous "De Bergham" pedigree to the extent of translating the Latin epitaphs and the old French mottoes which Chatterton incorporated in it, and that he tampered with the spelling of the Rowley "transcripts" in order to give them a more archaic appearance. He looks on Barrett as an unscrupulous man of the world who exploited the boy for his own purposes, and in various ways exercised a profoundly evil influence on his mind. I need hardly say that this is an aspect that not only has never been held before, but is one that will have to be proved more abundantly before it is accepted by the literary world, and perhaps especially by the Bristol admirers of the marvellous boy and the misguided surgeon.

Barrett, apart from his connection with Chatterton, was not a person of much importance, his chief claim to fame being his history of this city. How the value of it is depreciated by the incorporation of Chatterton's tales as facts need not be related by me. One can hardly believe that he wilfully concocted a false history of Bristol, as the truth could so easily be proved.

The story of Barrett's connection with the Chatterton manuscripts, as told by Latimer, our most reliable historian, is that the papers were taken to Catcott by Chatterton, and by the former shown to Barrett, who was collecting the materials for his *History of Bristol*, and in this way Chatterton was introduced to Barrett. Chatterton at once saw that Barrett was ready to accept anything that would suit his ideas, being quite taken in by him, and after that the supply of fictitious stories more than equalled the demand. How the spuriousness of the documents was recognised by Horace Walpole after conference with Gray and Mason is well known to all, but Chatterton had many followers or rather believers, amongst

whom may be counted the President of the Society of Antiquaries. The genuineness of the papers is not now believed in, but it is admitted by everyone that they show a wonderful power and cleverness.

If Ingram's story is true, why, I should like to ask, did not Chatterton include Barrett in his list of persons, more particularly Bristol ones, that he abuses for their neglect of him? Had Barrett been the instigator or even willing accomplice of Chatterton in his imaginary stories, that led to his undoing, why is he alone spared?

In his *Lives of the Poets* Johnson includes SIR RICHARD BLACKMORE, a member of our profession, and one whose poems have long since received the due reward of their merits. For us the chief interest lies in the part that he took in opposition to Sir Samuel Garth in the great fight between the apothecaries and the College of Physicians. In this controversy feeling ran very high, and the most scurrilous poems, pamphlets and libels were published, many of them too coarse to be repeated in these more refined days. The history of the affair is briefly as follows. The apothecaries had been originally mere grocers, and sold drugs as well as the necessary commodities of the kitchen; but they dispensed the prescriptions of the physicians, and so, not unlike the chemist of to-day, assumed a virtue to which they were not entitled. They, although not allowed to do so, presumed to administer drugs on their own responsibility or judgment, nor could they do any operation except bleeding for pleurisy. In James I's reign they obtained a charter and were placed under the control of the College of Physicians, who had the power to inspect drugs and, if found unsatisfactory, confiscate them. As time went on the apothecaries obtained such a position that they defied the College and began to prescribe for themselves. Finally the quarrel broke out over the dispensing of drugs for the dispensaries for the poor, which the junior members of the College ran for their own advancement, and ended in the physicians starting dispensaries and selling the drugs at cost price. This caused a split in the College itself, the opposition refusing to meet the others in

consultation. Blackmore in this way came into collision with Sir Samuel Garth. Garth's poem, called the "Dispensary," was a satire on the apothecaries and those who opposed them.

Blackmore was educated at Westminster School and St. Edmund's Hall, Oxford. His siding with the revolutionary party brought him to William III's notice, and resulted in his being made Physician in Ordinary. I doubt whether anyone now reads his poems.

The last two on my list are, though members of our profession, no particular credit to it, but they are two of the numerous irregular practitioners who were allowed to descend to any low practice in order to humbug the public.

To define "quackery" is difficult. If to "talk noisily and ostentatiously," as one dictionary I have consulted says, is quackery, then I fear that the term is of a wider application than many of us are prepared to accept, and some most reputable and esteemed members of our profession may be accused of an odious charge. They may be as wise as serpents and as harmless as doves, yet if they hiss or coo too loud . . .

The self-laudatory recommendations of JOHN TAYLOR certainly lay him open to the charge of quackery, for he had reduced this art almost to a science, and had his name been a more picturesque or a more euphonious one he would have added a new word to the English language.

John Taylor was an M.D. of half a dozen Universities that then ranked high in the schools of learning, and whose medical degrees were accepted in this country. He was the son of a doctor, and his son and grandson were doctors also. He studied at St. Thomas's under Cheselden, and was in practice in Norfolk as a surgeon before he forsook the narrow path and chose the broad one, which, wherever it may lead to, sometimes carries people to success in worldly goods and reputation in high quarters. Taylor made money. His house was crowded with persons seeking his advice on diseases of the eye, his speciality. He was appointed not only oculist to George III, but, according to his son's statement, to at least three other kings, several electors of the Holy Roman Empire, and to

dozens of reigning princes. His methods of advertising were simple. He travelled about England and the Continent, set up his booth in the market-place, and if he had not a brass band to noise him abroad he was not forgetful of effect in other ways. He " appeared dressed in black, with a long light ty'd wig, ascended a scaffold behind a large table raised about two feet above the ground and covered with an old piece of tapestry, on which was laid a dark-coloured cafoy chariot seat, with four black bunches (used upon hearses) tyed to the corners for tassels, four large candles on each side of the cushion, and a quart decanter of drinking water, with half a pint glass to moisten his mouth." By an irony of fate Taylor died blind at Prague in 1767 in a convent. What he was doing there I do not know.

Johnson said of Taylor that he " was the most ignorant man I ever knew, but sprightly. . . . Taylor challenged me twice to talk Latin with him. I quoted some Horace, which he took to be part of my own speech. He said a few words well enough."

The other quack was WARD, whom Johnson described as the dullest man he had ever known. Ward's nickname was Spot, from a mark on his face. He is said to have been a very stout man, travelling about the country in an open coach drawn by four horses. To show how quacks of this type were favoured, I may mention that Ward was called in to cure George II of his headaches, and given an allowance from the king to treat the poor, with sumptuous rooms provided.

This, gentlemen, concludes my paper. I trust that I have been able to make the subject that I selected an interesting one to you. For my own part, anything connected with the history of our profession is instructive, and I may have been fortunate enough to have chosen a subject that is new to many of you.

[Since the above address was delivered my friend Dr. Humphry Rolleston has called my attention to an account of a *post-mortem* examination on the body of Dr. Johnson, published by Mr. James Squibb in the *London Medical Journal*, vol. i, p. 615. The account is from a MS. folio of " Dissections," by James Wilson,

Lecturer on Anatomy in the Hunterian School of Medicine, who did the autopsy on December 15th, 1784, for Mr. Cruikshank, in the presence of Drs. Heberden, Brocklesby Butler (probably Butter), and Mr. White. The evidence of the examination proves that Dr. Johnson died of hypertrophied heart following asthma, as shown by the emphysematous condition of the lungs and great size of the heart. The aortic valves were slightly ossified, a gall-stone was found in the gall-bladder, and the kidneys, more especially the left, had "hydatids," no doubt cysts. The pancreas is described as being remarkably enlarged, and the spleen to have "almost the feel of cartilage." The sarcocele appears to have been more "hydatids." The cranium was not opened].

AURICULAR FIBRILLATION.[1]

BY

C. E. K. HERAPATH, M.D. Lond.

THE subject of this paper is a condition of irregularity of the heart which is quite commonly met with in clinical practice. Much work has been done on the subject recently both in the recognition and classification of the condition, and in the way these hearts react to drugs. I hope that what I have written may help in the recognition of the condition as a clinical entity, and perhaps in a small way also towards its treatment.

Auricular fibrillation is characterised by a persistently irregular pulse, both of force and rhythm, with usually more or less severe heart failure. It is met with slightly more frequently in women than men, and occurs generally in middle life, though cases in children, young adults, and old people are not rare. It is found chiefly in two heart conditions, (1) in the later stages of rheumatic mitral stenosis, and (2) in elderly

[1] A paper read before the Bristol Dispensary Clinical Society.

people with arterio-sclerosis and fibrous degeneration of the cardiac wall. In the last nine months I have taken tracings with Mackenzie's Polygraph from twenty-six cases of irregular heart, and of these fourteen were found to have fibrillation of the auricles, nine of which had a history of rheumatism. Of the fourteen, eight were women and six men. The condition is easily recognised by taking simultaneous tracings from the radial and jugular pulses (Fig. 1). The jugular pulse obtained from the neck should consist of at least three waves, one of which, the carotid or "c" wave, is found by measurement from the radial—it occurs $\frac{1}{10}$ sec. before the radial upstroke. The systole of the auricle, which takes place $\frac{1}{5}$ sec. before that of the ventricle, should give a wave—the "a" wave—$\frac{1}{5}$ sec. before

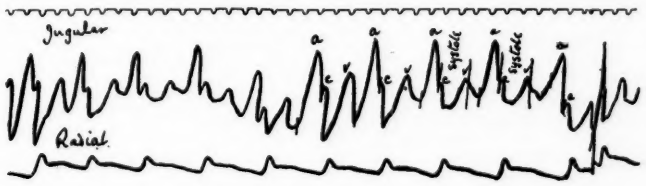

Fig. 1.

Normal tracing, showing the diastolic "a" wave and the systolic waves. In all tracings the time marker shows $\frac{1}{5}$ sec.

the "c" wave. The third or ventricular wave is not of importance to us to-night, save that it occurs during ventricular systole. Thus there are two waves during ventricular systole and one during diastole. The diastolic or "a" wave is absent in cases of auricular fibrillation, so that all waves occur during systole of the ventricle; and for this reason this type of pulse is called the ventricular type, in contradistinction to the normal or auricular type, where the "a" wave is present. On examining the radial pulse, one is struck by its absolute irregularity. Beats of all sizes are indiscriminately following one another, and the size of the wave does not at all seem to depend on the length of the pause preceding it, as is usually the case. Large beats are found after a short pause, and vice versa. If the length of the successive beats be accurately measured, it is found that

beats of the same length practically never come together. This condition of pulse has earned for itself the name of pulsus irregularis perpetuus and delirium cordis. On auscultation of such a heart, the sounds are extremely difficult to analyse, for they come so rapidly and irregularly that it is often impossible to say which are first and which second sounds. Often there is a series of rapid beats, which may be followed either by a few slow ones or by another series of rapid ones. There may be murmurs—in the rheumatic and mitral stenotic cases there are almost always a systolic or a loud diastolic murmur—provided the heart be not beating too rapidly, when often none can be discovered. An important point is that a crescendo murmur is not heard in these cases. The reason for this I will

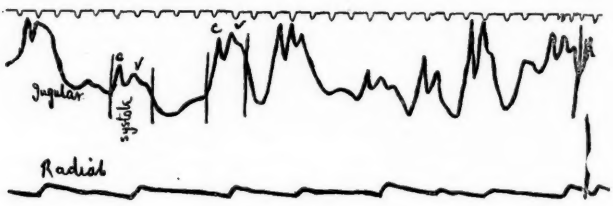

Fig. 2.

Tracing of auricular fibrillation, showing irregularity of radial and the ventricular form of venous pulse. There is no "a" wave preceding the "c" wave.

state later. On inspection of the veins in the neck, one sees a prominent pulsation in them which is systolic in time, and there is usually much dilatation and engorgement of the venous system.

These cases were first classified by James Mackenzie, who suggested that auricle and ventricle were contracting simultaneously, owing to the stimulus arising in the auriculo-ventricular node of Tawara, instead of in the normal situation at the root of the great veins. He thus accounted for the absence of the "a" wave in the jugular tracing, and called the condition "nodal rhythm." Since this much work has been done both in Germany and in England, the chief English

worker being Thomas Lewis, of University College, London. He published the result of his work in the journal *Heart*, March, 1910, proving that in this condition the auricles were not contracting properly, but were in a state of fibrillation somewhat similar to that which occurs in the muscles in progressive muscular atrophy. His methods were as follows. He produced fibrillation of the auricle in dogs by means of electrical stimulation to the exposed heart, and while in this state he noticed that the ventricles took on this disorderly rhythm. On taking electro-cardiograms, a method by which the electrical variations of the heart-muscle contractions are registered by photographs of the movements of a string galvanometer, he found that they were identical with those taken from human beings with this kind of pulse, and further he has on two occasions seen the heart of a horse afflicted with this disease beating in situ.

We may therefore, I think, take it as proven that the auricles do not contract normally, but are in a continual state of fibrillation. This explains why a presystolic murmur does not occur; for in spite of criticism, there is not much doubt that a presystolic murmur is the result of auricular contraction.

Now let us consider how this state of things affects the heart. Normally, ventricular contraction is caused by stimuli arising from the roots of the great veins, passing through the auricular wall, down the bundle of His, and thence to the ventricular muscle. In these cases the stimuli arise in the auricle, which is for some reason in a state of irritability, and these waves from the fibrillating auricle are continually bombarding the bundle of His. As often as the conductivity of the bundle is sufficiently restored to allow of the passage of an impulse, one or the summation of several of these stimuli pass down the bundle and cause the ventricle to contract. The stimuli not being regular either in force or time will account for the irregularity of the ventricle. Whether the circulation can be carried on will depend on the sufficient filling of the ventricle through a possibly stenosed valve without the help of the auricular contraction, and on the power of the ventricle to continue

contracting under such adverse circumstances. One of the chief factors in the maintaining of the flow of blood into the ventricles is probably the intra-auricular tension, which is high, and this in most cases serves to force the blood through the auriculo-ventricular valves and so to carry on the circulation.

With regard to the pathology of this condition, a fair number of autopsies with sections of the heart have been recorded. Unfortunately, attention has been paid to one part only of the heart by the various pathologists. Thus in Mackenzie's cases the bundle was the chief object examined; in other cases it has been the auricle. In most, however, fibrosis of the auricle has been found, and lesions in the bundle in a great many. Schonberg has recently examined five cases pretty thoroughly, and in all has discovered a chronic lymphocytic infiltration of the tissues at the junction of the superior vena cava and the auricle, that is just about the position of the normal pacemaker of the heart. Lewis suggests that fibrosis of the auricle, by interfering with its circulation, sets up a state of irritability of the auricular tissue, and that this causes firstly premature beats of the auricle and finally fibrillation.

The action of the digitalis group of drugs in these cases is very interesting. Most of those caused by rheumatism show a marked reaction, while many of those without a rheumatic history show no reaction at all. In the former the reaction is often very characteristic, but to obtain it the drug needs to be pushed—mxx of the tincture three times a day is the usual dose. It is a noteworthy fact that vomiting and other signs of poisoning rarely set in before the heart reacts. The total amount necessary to cause reaction varies, but the average is from ʒiv to ℥i. As soon as the slowing begins diuresis sets in, œdema and dropsy clear up like magic, and very shortly the patient is perfectly comfortable. Mackenzie shrewdly suggests that the reputation of digitalis is based on its action in this class of case. Squills and strophanthus act in the same way, but require larger doses up to ʒii in the twenty-four hours, and they seem more apt to produce troublesome symptoms, such as diarrhœa.

If we analyse the result of digitalis upon the pulse, we find that there are three main types of reaction. (1) A simple slowing may take place, the pulse remaining completely irregular; (2) the pulse may be further slowed to 30 or 40 per minute, when it becomes quite regular, each beat being of the same size and length; and (3) slowing may take place with a persistent coupled rhythm, there being an alternation of a large beat followed by a small beat, and then a long pause before the next small beat. In this case the distance between the large beat and the small one is always the same, but the length of the long pause is quite irregular.

That digitalis and its allies have the power of slowing the pulse is well known. It may effect this in two ways

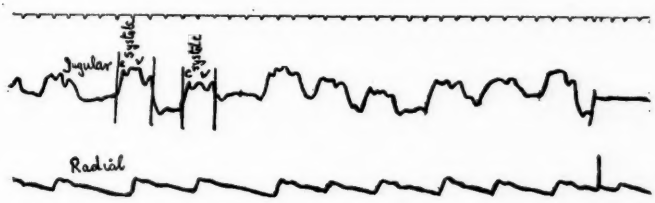

Fig. 3.

Auricular fibrillation, showing simple slowing with digitalis ℿ *x four times a day. The rate was* 112 *before the digitalis was given.*

at least. (1) In normally acting hearts, where the rhythmic stimuli start from the root of the great veins, that is from the sinus-node of Keith, it slows the heart by acting on the node through the vagus. Seeing that in cases of fibrillation the normal sinus rhythm is in abeyance, this method is not possible. (2) In cases where there is any defect in the bundle of His digitalis has been proved to further depress the conductivity of the bundle, and so variable degrees of heart block, where some or all stimuli fail to reach the ventricle, may be induced. In nearly all the rheumatic cases of auricular fibrillation some pathological condition of the bundle has been found, thereby allowing the inference to be

drawn that some defect in conductivity existed during life. Digitalis, by increasing this defect, would cut off some of the irregular stimuli of the fibrillating auricle from the ventricle, and so a simple slowing of the pulse would occur, but it would still remain irregular. (Fig. 3.) If the digitalis causes a complete block, the ventricle, as in Stokes-Adams disease, may take on a rhythm of its own, and a regular beat of 30 to 40 to the minute occurs. (Fig. 4.) Owing to the better filling of the ventricle during the long diastole, the heart contracts more strongly, and so in some cases we may have the paradox of the patient being better with heart block than without it. The

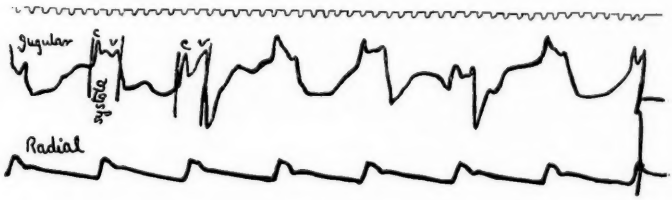

Fig. 4.

Auricular fibrillation, showing complete heart block under digitalis. Radial pulse is regular, beating 44 to the minute.

auricles, as has been shown by electro cardiograms, continue to fibrillate as before.

The third variation (the coupled rhythm) has not, so far as I know, been satisfactorily explained up to the present. The second small beat has been proved to be a ventricular extra systole, that is a premature beat arising in the ventricle independently of the auricles. When either of these reactions has been obtained the digitalis may be lessened, as pushing it further will do no good and may do harm. A point I should like to accentuate is, that when a reaction to digitalis has been obtained the drug should not be stopped, but continued in slightly smaller doses. Too often digitalis has been cut off simply because the pulse has been slowed, and if this be done the rate invariably rises again. The heart must be kept slow, and one often finds that it can be maintained at any given pace

according to the amount of the drug exhibited. As to the most desirable rate to be maintained, the patient's feelings are usually the best guide, and an intelligent patient can often regulate his own dose. I know one lady with auricular fibrillation who for years has taken digitalis according to her sensations, and has kept herself comparatively well. Another was in bed with dropsy, cyanosis and dyspnœa for eight months. She was given small doses of digitalis occasionally, but it seemed always to cause sickness. On giving her one of Nativelle's digitalin granules twice a day her pulse came down to 44 (see tracing, Fig. 4), and recently she walked over a quarter of a mile without discomfort. To stop the drug in these cases is to invite an attack of heart failure. Most of us remember patients who have come back again and again to hospital as soon as they gave up the out-patient department and their digitalis.

The treatment of cases that do not react to digitalis is unsatisfactory. When compensation has broken down they rarely regain it to any great extent, and the duration of their existence depends upon how long the ventricle can stand the rapid irregular contractions. Caffeine and nux vomica perhaps help as well as any drugs.

There is another rarer group of cases where the pulse is slow, usually about 50–60, but on analysis proves to be completely irregular, and the venous pulse is of the ventricular type. These are cases of auricular fibrillation, where there is an organic defect in conductivity either from arterial disease of the vessels supplying the bundle or from fibrosis of the bundle. These are the cases designated by Mackenzie in his book as nodal bradycardia. The condition may go a step farther, and a complete block in the bundle may be present, when the ventricle will take on its own rhythm of 30 per minute or thereabouts. In these cases, as in one published by Lewis and Mack, there may be epileptiform seizures, and indeed they only differ from the Stokes-Adams syndrome in having no co-ordinate contraction of the auricles.

The prognosis in these fibrillation cases depends largely on

how the heart behaves under the new conditions. The inception of this abnormal rhythm causes in some patients sudden death immediately; in others acute dilatation of the heart with dropsy, dyspnœa, anuria, and enlargement of the liver; and again, other patients come to the physician without any idea that they have anything wrong with their hearts. Taking these seriatim, in the first prognosis is unnecessary. In the second case, with acute heart failure, the prognosis depends on the reaction to digitalis. If they react and go on taking the drug, they may live quite useful lives for years, provided they can take things quietly; if there be no reaction the prognosis is bad. In the cases that are unaware of their condition, although they get through the ordinary routine of daily life, one finds on questioning them that they are breathless on undertaking any unusual exertion, and that they are liable to discomfort or even pain in the region of the præcordium. In other words, the reserve power of their hearts is crippled, and the immediate prognosis depends on the amount of crippling. If it be slight, they have with care several years before the compensation breaks down, and when that occurs the future depends on their reaction to digitalis. In the cases with broken compensation which do not react to digitalis the prognosis is bad. They may live for some months if they lie in bed, but they slowly develop all the signs of chronic heart failure, and die in spite of all the drugs at our command.

Can auricular fibrillation be recognised without resort to polygraphic tracings? This is an important point, since most of us have little time and no machine. I think it can. If one relies on a continuous and complete irregularity, not an occasional one, a visible systolic pulsation in the veins of the neck, and signs of venous engorgement with the absence of a presystolic murmur, there will be few cases where the diagnosis will be wrong.

FURUNCULOSIS.

BY

L. SHINGLETON SMITH, M.B. Cantab.

A FEW remarks from one who has been a victim to such a common yet troublesome disease as furunculosis may not be entirely without interest.

So much has been said and written, and Bier's cup has been so widely advertised for the treatment of boils, that I venture to ask whether those who believe so highly in its merits have only taken it from hearsay or have actually proved its efficiency either on their patients or themselves.

The beginning of my attack of boils coincided closely with my purchase of a mare—to be strictly accurate, the boil followed the mare by about a fortnight—and accordingly I put down the saddle as the exciting cause, though there is no doubt that I had been very run down for a month previously. The boils began to arrive with a quiet persistence, generally one at a time, and occasionally two together, but as soon as one had run its course the second would be well on its way; at times they were so bad that I could neither ride the mare nor the bicycle, nor even drive, and had to give up work for a few days. Being thoroughly convinced by what I had read and heard of the utility of Bier's cupping treatment, and being desirous of ridding myself of such painful accessories, I vigorously applied the cup for an hour off and on both morning and evening, and sometimes midday when I could find the time, but to my surprise and discomfort without the looked-for success.

I applied the cup to the boils when first recognised, that is when they were not bigger than a large pin's head, but the application seemed not to have the slightest effect. The boil continued to grow, and in about three days the inguinal glands would be affected, and the boil having reached the size of a

small saucer, would gradually subside and the slough separate, sometimes with a little pus.

If I applied the cup in its later stages the induration would spread under the edge of the cup, and the application become most painful.

The only way in which the cup seemed to be of any benefit was after the free incisions (of which I had well over a dozen), when the matter and slough came away perhaps a little more readily than would otherwise have been the case. Various other treatments were adopted; but in spite of all—Bier's cupping, hot Jeyes' baths, sulphur and mercurial inunctions, and tonics—the boils kept the even tenor of their way, in nowise abating.

It was then, after much prompting, that I determined to try what vaccine therapy could do, and accordingly from some pus sent them the Clinical Research Association isolated and grew the staphylococcus pyogenes aureus, and in a short time sent me a dozen phials, containing different doses, 20, 25, 50, 100, 150, 250 and 500 million cocci. A few hours after the first dose of 20 millions had been injected an extraordinary reaction, both locally and constitutionally, appeared. The boil, at that time getting well, became exceedingly tender and more painful than it had been at all, and after a few hours got better again. On the next day I felt a bit feverish, and the temperature rose to 103. I felt and looked so ill that Dr. A. J. Wright, who was very kindly doing my work and helping me with the injections, thought I was in for a bad illness. However, at 6 p.m. I arose and had a good meal, feeling perfectly well. After this increasing doses were given regularly about once a week, and at first slight reactions, both locally and constitutionally, appeared, but later no reaction at all. The boils gradually became fewer and less severe, and finally disappeared altogether for the space of six months.

All the boils during the latter period were painted with liq. iod. fort., and when detected and painted whilst quite small simply withered up and gave no further trouble, and if allowed to develop to say the size of a shilling, they spread no

farther, came to a head, and the slough separated in a comparatively short time.

After the boils had ceased to come there continued to appear pimples, which shortly became pustular, and with painting withered up, which clearly shows that the resistance had been increased, inasmuch that those same pimples two months earlier would have shown no sign of pus, but spread as an indurated phlegmonous mass affecting the inguinal glands. Six months later another boil came in the same region, and presuming that the same organism was at work, an injection of 250 million was given; and following this there came at least a dozen commencing boils, all of which were painted with liq. iod. fort., and all of them aborted.

Whilst the injections were continued, at first at regular intervals, the boils steadily diminished in numbers, and there was no sudden outbreak of them as appeared six months later after the injection of a single dose of 250 million cocci. From this it appears that the immunity acquired had to a great extent disappeared, inasmuch as a boil appeared, and after the large injection a negative phase was manifested by the sudden abundant crop of small boils.

Three months later a small boil began, and another three months after that, both of which were aborted by the application of liq. iod. fort.

Although Bier's cupping has been highly lauded in the treatment of furunculosis, in my experience (a most painful one) the application of liq. iod. fort. is far more efficacious, and this I put down to the following reasons.

Firstly, the iodine application produces hyperæmia in the skin and not in the fascia and subcutaneous tissue, as I think the cup is more apt to do, especially in the case of boils which are situated for the most part in the soft parts, such as the neck, back, and gluteal region, when the skin is readily lifted up and drawn into the cup without very much stretching.

Secondly, the iodine application is constant and always acting, whether the patient be busy or otherwise.

Thirdly, the iodine destroys the germs in the surrounding skin.

In all acutely hyperæmic states of the skin, whether they be due to sunburn, chilblains, toxic rashes, infectious fevers, or slight scalds, peeling more or less invariably follows, but I have never seen the application of Bier's cup followed by any tendency to desquamation.

This may in part be due to the inefficient method of carrying out the application, for to keep the part congested one must be constantly busy applying the cup, a method which forbids one to do anything else; and if in a region where one cannot apply it with the help of a looking-glass, then it must prevent someone else from doing any work. It is quite impossible for a doctor on his round to apply the cup with any likelihood of doing good. In the case of iodine one can always apply it oneself; two and occasionally three coats may be necessary, but invariably within a short time the boil begins to mend.

Therefore we may presume that vaccine therapy is the most valuable constitutional remedy we have, but the immunity acquired is only temporary, whilst liq. iod. fort. is the most valuable and convenient local remedy.

FOUR CASES OF CYSTS IN THE NECK OF SIMILAR CHARACTER, AND POSSIBLY DEVELOPED IN CONNECTION WITH BRANCHIAL CLEFTS.

BY

CHARLES A. MORTON, F.R.C.S.,

Professor of Surgery in the University of Bristol,
Senior Surgeon to the General Hospital and the Children's Hospital,
Consulting Surgeon to the Cossham Memorial Hospital.

DURING the last few years these cases have come under my care. All the patients presented soft, fluctuating swellings just below the angle of the jaw and under the sterno-mastoid. In one case the cyst was of several years' duration, in the others of several months, and in all they were quite painless. The question of diagnosis from chronic tuberculous abscess had to be

carefully considered. The absence of any solid enlarged glands was against the diagnosis of gland abscess, but did not of course exclude it, and a certain diagnosis could not be made between the two conditions before operation. In my last case an operation had been performed some years before the patient came under my care for excision of tuberculous glands at another hospital, and a very small firm gland could be felt under the scar on that side of the neck. This was, of course, rather strong evidence that any chronic fluctuating swelling on the other side of the neck was also a gland abscess, and yet the swelling was so like the other three cysts I had removed that it seemed to me quite likely it might prove to be of that nature, as it did.

The possibility of a sub-fascial lipoma had also to be considered in the differential diagnosis of these cysts, and as I was dissecting out one of them it looked so like a lipoma I thought that it was of that nature. The yellow pea-soup-like contents showed very clearly through the very thin cyst wall which remained after the outer layers were peeled off, and caused the striking resemblance. After removal it was by no means easy to say what form of cyst they were. The contents were not the sebaceous material described in the books as present in branchial cysts (when they do not contain mucus). In one cyst it resembled pea-soup, and in another was so like pus that I thought when I saw it cut open in a basin, before I was myself able to examine its wall, that I must have removed a chronic tuberculous gland abscess, and in another case it was just like very pale liquid fæces. But the fluid which looked so like pus did not present its microscopic characters, as there were comparatively few cells, but many oil globules.

During the dissection out of the cyst, I was conscious of peeling off more than one layer of cyst wall, the outermost being rather firmly attached to the surrounding deep structures; but eventually I came on a very thin-walled sac, almost the whole of which could be shelled out. This wall was so thin in places as to be transparent, and on its inner surface in some of the cysts, were raised white bodies, almost the size of small pin heads, and suggesting miliary tubercles. On the

inner wall of other cysts these were confluent, forming raised white patches of some size. In three of the cysts the wall was examined microscopically, and showed a lining of layers of flattened epithelium. In one cyst there was quite a thick piece of tissue in the wall, and this resembled a portion of lymphatic gland under the microscope.

Cysts arising in unobliterated portions of the branchial clefts are not usually congenital, but are stated by some surgical writers to occur about puberty, by others before thirty years of age, but occasionally quite late in life. So that the age of the older patients would not be too great for branchial cysts.

There is no other recognised cyst of the neck with which these can be classified. They are entirely different from cystic hygroma, or, as they are sometimes termed, "lymphatic cysts." There is certainly no proof that these cysts arose through failure in obliteration of a portion of a branchial cleft; they have more the character of cysts believed to arise in that way than any other form of cysts of the neck, but they were not adherent to either the hyoid bone or the pharynx, as such cysts are stated often to be. It seems, however, well to carefully record these cases, for such cysts are very likely to be considered to be chronic gland abscesses; and if they are not branchial cysts, these records, when compared with the records of other cases of the same kind, may throw light on their nature. In all my four cases the cysts were on the left side.

Case 1.—L. S., female, aged 30. March, 1908. General Hospital. Soft, painless, fluctuating swelling, size of hen's egg, just below angle of jaw on left side, under anterior border of sterno-mastoid. Short duration There were no solid glands to be felt, and the diagnosis lay between gland abscesses of tuberculous nature and a cyst. At the operation a cyst was found lying on the large vessels. It contained pea-soup-like material. Several layers of flattened epithelium were found on the inner wall. Primary union.

Case 2.—C. P., female, aged 21. November, 1910. General Hospital. Swelling in neck began eight months before admission. There was a very soft, fluctuating swelling, size of a hen's egg, under the left angle of the jaw and anterior border of sterno-mastoid. No solid glands could be felt. The cyst lay on the deep vessels of the neck. This is the case in which

it resembled a lipoma during removal. The character of the cyst wall has been already described. Primary union.

Case 3.—W. V., male, aged 18. February, 1911. General Hospital. He noticed the lump in his neck, the size of a marble, four months before admission. It had been painted with iodine before admission. There was an oval swelling, the size of a duck's egg, lying under the upper part of the left sterno-mastoid, bulging in front of its anterior border, but also extending into the posterior triangle. It was softly fluctuating, and quite smooth. No solid glands could be felt on that side of the neck, and there was only one, the size of a shot, in the posterior triangle on the other side. This was the case in which the cyst contained fluid resembling pus. The structure of the cyst has been already described. Primary union.

Case 4.—J. W., female, aged 30. Women's Ward of Children's Hospital. March, 1911. Six years before admission she had tuberculous glands removed from right side of neck at St. Thomas's Hospital. Information as to this was kindly furnished by the Registrar at St. Thomas's Hospital. At the same time she says she had a lump in the left side of the neck, and this had grown into its present size since, more especially in the last three years. She never had any pain from it. There was a very soft, fluctuating, smooth swelling just below the left angle of the jaw, and under the anterior border of the sterno-mastoid. There were no solid glands on that side of the neck, but there was a small one under the scar, where glands had been excised on the other side. This was the case in which the cyst contained fluid like pale liquid fæces. The character of the cyst has been already described. Primary union.

A CASE OF ATAXIA IN A CHILD AGED THREE AND A HALF YEARS.

BY

EDWARD CECIL WILLIAMS, B.A., M.B. Cantab.,

Physician to the Royal Hospital for Sick Children, Bristol.

ATAXY may be a symptom of many conditions in children, for instance as a sequel to acute diseases—in cases of tumour of the cerebellum or pons. In the following notes I propose to describe the case of a boy aged 3½ years, whose symptoms were observed during the first six months of his life.

H. D., aged 3½ years, admitted into the Children's Hospital February 12th, 1911, is an illegitimate child, and his parents are first cousins. He was a full-time child, labour was normal, and he was bottle fed. During the first six months of his life it is said he was much neglected, and when adopted by his present guardian was in a very weak condition. During the first year of his life he had several attacks of bronchitis. Child was thought to be mentally deficient, did not sit up till eighteen months, and did not talk until two years of age. So far as is known has had no infectious disease. Has been under treatment in another hospital.

On admission child looked fairly healthy, there is some evidence of past rickets. He has a rather vacant expression, his head is below the average in its maximum circumference, the occipital region is rather flattened. His hair has a tendency to be coarse, and is rather dry.

Speech is indistinct, he can be taught to pronounce words properly, he does not stumble over any particular letter, he only speaks "slovenly." Palate is not high arched; teeth carious. He is not allowed to feed himself, as the movements of his arms are so unsteady, jerking his food out of the spoon, and not always succeeding in getting the spoon to his mouth. He can hyperextend his wrists to an angle of 60°. He cannot walk by himself, and throws his legs about in an ataxic manner. Knee-joints are very mobile, and can be hyperextended. He cannot stand up with his heels together with his eyes open. Knee-jerks are brisk, plantar reflex flexor. Sensation to heat and cold normal, no nystagmus, no ocular symptoms, no fundal changes. Has perfect control over his sphincters. Examination of other organs reveal no abnormality.

Since admission (two months ago) there has been a very marked improvement both in his mental and physical condition. He is much more intelligent, can learn fragments of songs, and can walk a short distance without assistance.

Treatment.—Small doses of thyroid extract were given, as it was thought on admission there might be some degree of thyroid insufficiency. It may be of interest here to refer to the investigation of Captain McGarrison on endemic goitre in the Chitral and Gilgit Valleys of India. During that research he came across some cases of children of goitrous parentage, whose brothers and sisters were cretins, who were the subjects of a condition called by him "a nervous form of cretinism." Those cases closely resembled cases of cerebral diplegia. They improved somewhat when treated by thyroid. Whether the improvement in this case is in any way dependent on the thyroid is a doubtful question. He is being taught to play with toys and to walk by pushing a horse on wheels around the ward.

What is the cause of the ataxy? The absence of headache, sickness and optic neuritis exclude the possibility of a cerebellar or pontine tumour. Post-diphtheritic paralysis is out of the question, there is no history of any sort of infectious disease.

Then there is Friedreich's or hereditary ataxy, in which the disease often comes on during early life, after one of the specific fevers. It is usually hereditary, and occurs in families where there is some tendency to some form of nervous disease. In Friedreich's ataxy the patient tends to get progressively worse, whereas this boy is showing signs of improvement after a comparatively short stay in hospital. I am therefore inclined to place this boy in the same category as those cases of congenital ataxia described by Batten.[1]

The morbid anatomy is at present unknown, there is much to suggest a faulty development in the cerebellum, and in some of the cases, my own being a case in point, the alteration in mental condition would suggest a probable change in the cerebrum also. It seems likely extensive histological changes will be found in the brains of these cases.

P.S.—May 15th, 1911. Boy continues to make great improvement both in intelligence and movements.

Progress of the Medical Sciences.

MEDICINE.

The Measurement of Arterial Pressures.—All measurements of arterial pressures now in use depend upon the compression of an artery by an armlet or cuff into which air can be pumped, and a manometer or aneroid dial to record the pressure at any given point during the observation. But not only are there several points in the arterial cycle in which this pressure may be noted, but also there are several methods of ascertaining the exact moment in time at which these points occur. Thus, as is indicated by Gibson,[3] there is the maximum or systolic

[1] *Brain*, 1901, xxiv. 171; *ibid.*, 1905, xxviii. 484.
[2] *Rep. Royal Soc. Med., Med. Sect.*, 1909. [3] *Lancet*, 1910, ii. 1699.

pressure or point at which the pulsation of the artery is arrested, the minimum or diastolic pressure or point at which the column of mercury or the needle of the aneroid shows the widest oscillations, and the mean pressure or point midway between these two. The difference between maximum and minimum pressures is the " pulse pressure," and the ratio between the pulse pressure and the maximum or systolic pressure is the " co-efficient of pressure."

There are four ways in which the occurrence of the maximum, minimum, and mean pressures can be determined in practice.[1] (1) The palpatory or tactile, in which the obliteration of the arterial pulse is determined by the finger. (2) The graphic, in which the obliteration of the pulse is determined by an ordinary sphygmograph fastened over the artery instead of the observer's finger. (3) The oscillatory, in which variations in the oscillation of an indicator are noted by the eye. (4) The auscultatory, in which the sounds produced in the artery when the cuff or armlet is inflated or deflated are observed by means of some form of stethoscope.

These four methods may now be described in more detail.

(1) The palpatory or tactile method, in spite of its simplicity, is open to serious objection. The personal factor, as pointed out by Oliver,[2] cannot be sufficiently eliminated. Even trained observers may make an error of 10 mm. of mercury in estimating the point at which pulsation in the artery ceases, while in less skilled persons the limits of error are necessarily much wider.

(2) The graphic method, which has been employed by Janeway and later by Masing and Sahli, requires two observers, one to look after the manometer and the other to watch the sphygmograph tracing; moreover, there are oscillations due to the movement of the sphygmograph needle, and the points of correspondence between manometer pressures and the pulse tracings are not easy to determine.[3]

(3) According to Oliver,[4] the significance of the variations in oscillation of the manometer or aneroid needle is not absolutely certain. The point of reappearance of the oscillations when the armlet is deflated is certainly a measure of the maximum or systolic pressure, but the point at which it again disappears as the deflation is continued is not so definitely significant. In his opinion, and also in the opinion of Ettinger and Gittings, the lower limit of oscillation represents the true diastolic pressure, a point which others believe is represented by the

[1] Goodman and Howell, *Univ. Penna. Med. Bull.*, 1910, xxiii. 469.
[2] *Proc. Roy. Soc. Med.* (*Med. Section*), 1910, iii. 207.
[3] Hollmann, *St. Petersb. Med. Wchnschr.*, 1910, xxxv. 560.
[4] *Quart. J. Exper. Physiol.*, 1911, iv. 47.

point at which the oscillations are widest in range (optimum oscillation). Oliver believes that it will be shown hereafter that the point of optimum oscillation or maximal excursion of the indicator represents the *mean* arterial pressure.

(4) The auscultatory method was first described by Korotkow in 1905, and although the exact description and significance of the sounds heard have been variously given by several observers, there is in the main a considerable body of opinion in favour of its being the most accurate and useful of all the methods as yet described. Goodman and Howell [1] thus describe the procedure. An ordinary armlet connected with a manometer is placed over the brachial artery, and the sounds are auscultated with a stethoscope over the same artery, just below the point of compression, care being taken not to press on the artery. The pulsation having been arrested by pumping up the armlet, the air in it is gradually released, and a series of sounds are heard which have been divided into a varying number of "phases" by different observers. Krylow recognised three; the first sound a "loud, clear-cut, snapping tone," then a murmur, and lastly a second sound, duller than the first, which becomes "muted," and finally disappears. The last of these phases was by Ettinger and Korotkow further subdivided into two portions, the first of which resembled the original first sound, but was less well marked, and the second (named the fourth phase) consisted of a duller note. Finally a fifth phase, in which all sounds disappeared, was added to the preceding four.

The first four phases are described by Oliver [2] as a series of "throbs," characterised (1) by sharpness, (2) by murmurishness, (3) by loudness, (4) by dulness. He considers that the third is the least constant, being frequently absent or too short for detection.

The causes of the various phases are probably as follows. It is practically certain that the first phase is due to the inrush of blood into the empty artery below the point of constriction. It represents, therefore, the maximum or systolic pressure. The second phase is possibly produced by eddies in the blood current as the artery gradually fills up. The third and fourth phases are practically transitional; but, as will be seen, considerable importance is attached to the third phase in clinical observations, because its character will give a clue to the degree to which the artery below the armlet has become collapsed, and the rapidity with which it refills. The fifth phase, or as Oliver puts it the lower limit of the range of the throb, is thought to indicate the diastolic pressure, but there is some uncertainty still on this point.

In normal persons, with a pulse pressure of 45 mm. of

[1] *Loc. cit.* [2] *Loc. cit.*

mercury, Goodman and Howell determined the average pressures as follows :—

First phase	14 mm.
Second phase	20 mm.
Third phase	5 mm.
Fourth phase	6 mm.

Oliver, instead of using an ordinary stethoscope, has devised a small tambour, which is *lightly* buckled on to the bend of the elbow, with tubes leading to each of the observer's ears. He also confirms the auditory method by a visual one, in which the same or a second similar tambour is buckled *tightly* on to the thick part of the forearm, and connected with a small indicating tube filled with coloured spirit. The oscillations of the column of spirit (maximum, minimum, and optimum) are noted.

Clinical Interpretation of Blood Pressures.—Fischer[1] has shown that in anæmia from various causes the second phase (murmur) is long and well marked, but the third phase is diminished. There is prolongation of the fourth phase, and the lower limit (fifth phase) shows a low mercurial reading. A number of observers agree that in cases of cardiac insufficiency the second and third phases are weakened or absent. Some believe (Ettinger) that the absence of the third phase only shows a moderate degree of insufficiency, and that in the extreme grades the second, third and fourth all disappear. Fischer noted that in arterio-sclerosis the third phase was very distinct; and this was practically confirmed by Goodman and Howell, who also found that when the second and third phases were not prolonged, in spite of arterial thickening, the circulation shows signs of failing. They also made the interesting observation that in aortic incompetence the fifth phase ceased to exist, that is the murmur or "third" continued after the pressure on the artery had been released below the point of diastolic pressure.

When a weakened heart is improving under treatment the sequence of phases tends to return to normal, so that the effect of any therapeutic measures may be gauged.

Normal and Abnormal Pressures.—Lowsley[2] has made observations on the effect of exercise on normal blood pressures. He finds that all forms of exercise cause a rise in both systolic and diastolic pressures, but that the rise is greater in the former. The pulse pressure is thus increased, which may indicate stronger cardiac action as well as increased pulse rate. After a certain period reaction sets in and the pressures fall below normal; the more exhausting the exercise the longer this fall will persist. The systolic pressure shows the greatest fall, and

[1] *Deutsche Med. Wchnschr.*, 1908, p. 1141.

[2] *Am. J. Physiol.*, March, 1911.

thus the pulse pressure falls also. Moderate exercise of a long period fails to influence pressures so much as a short and violent effort.

Gibson[1] quotes as extreme abnormal pressures 300 mm. systolic and 260 mm. diastolic in interstitial nephritis with arterial degeneration, 150 mm. systolic and 70 diastolic in aortic regurgitation, 270 mm. systolic and 80 mm. diastolic in heart block.

In acute infections (especially typhoid) there is an early rise of blood pressure and an early fall, and in lead poisoning and gout the pressure is also high. Arterio-sclerosis does not necessarily involve high arterial pressures. Different observers have given 35 to 50 per cent. as the number in which they remained low. In anæmia, asthma, and myxœdema the pressure is high; in cases of amyloid kidney and Graves's disease it varies, but is usually low; in phthisis and Addison's disease it is low.

J. M. FORTESCUE-BRICKDALE.

SURGERY.

Treatment of Stone in the Bladder.—In his *Lettsomian Lectures*[2] Mr. W. F. Haslam traces the history of operations for stone from the earliest times, giving accounts of the various procedures adopted in the past. In the last lecture he sets forth the methods at present in vogue amongst the surgeons of this country. In order to ascertain their present practice, he sent a series of questions to the surgeons attached to the principal English hospitals. The answers to these questions are interesting as representing the opinion and practice of the surgeons of this country at the present date. He received about 240 replies. The first fact that strikes us on examining these replies is that suprapubic lithotomy is now the operation of choice for all cases young or old, simple or complicated. About 67 per cent. state this to be their universal practice. A few years ago lithotrity was the favourite method; now only 12 per cent. express themselves in its favour as a routine operation. The opinion generally held is, that unless you see enough of stone to become proficient in lithotrity it is better to cut. Another very striking fact is that the prevalence of stone in the bladder is markedly decreasing—it is now a rare disease in this country. This statement is made by surgeons in all parts of England.

From Norwich, at one time a great centre for stone, a surgeon writes: "We scarcely get any cases of stone in the bladder

[1] *Loc. cit.* [2] *Brit. M. J.*, 1911, i. 347, 435, 548.

now, though fairly common in the kidney. This is a change, as I can remember, about thirty years ago, seeing three lithotomies in a morning." The general surgeon, then, has now but little chance of becoming an expert lithotritist.

When the method of performing lithotrity was so greatly improved by Bigelow in 1878, a suprapubic opening of the bladder was still a serious undertaking, and crushing came into considerable favour for the next twenty-five years or so. The comparatively slight risk now attached to cutting operations, the greater precision and rapidity of cystotomy, and the few opportunities of becoming an adept at crushing, leave little doubt but that suprapubic cystotomy must be at the present time the operation of choice. It is, moreover, suitable for all cases of stone. The great majority of those who practise lithotrity allow that crushing is not suitable for certain conditions, such as enlarged prostate, cystitis, extreme youth and great size or hardness of the stone. A considerable number of stones are associated with enlargement of the prostate and cystitis, and therefore not suitable for crushing, except in the opinion of very few. Of 224 who replied to the question as to the method adopted in prostatic enlargement, only sixteen mentioned crushing, and they were only prepared to attempt it "if possible."

A more detailed analysis of the replies to Mr. Haslam's question is worthy of study.

QUESTION 1.—What operation do you usually perform for the removal of a stone before the age of puberty?

221 replies, which he groups as follows: suprapubic lithotomy, 144; lithotrity for small stones, otherwise suprapubic, 35; lithotrity if possible, 9; lithotrity, 7; suprapubic as a rule, sometimes lithotrity, 9; after four years lithotrity, before, suprapubic, 2; after seven years lithotrity, before suprapubic, 1; lithotrity almost invariably, but in large hard stones in very small children suprapubic, 6; lithotrity if no permanent cystitis, 2; lithotrity or suprapubic, 1; lithotrity or lateral lithotomy, if the stone is large, suprapubic, 1; median lithotomy, 1; lateral lithotomy, but lately suprapubic, 1; suprapubic, and if the stone re-forms median or lateral lithotomy, 1; lateral lithotomy, rarely lithotrity, 1.

It is clear from these figures that the suprapubic operation is the one usually performed. Only 3 per cent. refer to lithotrity as the method adopted without reference to any contra-indications. The perinæal method is mentioned, but is clearly almost obsolete.

QUESTION 2.—What operation do you usually perform for the removal of a stone from the male bladder after puberty, when there is no evidence of prostatic enlargement?

240 replies as follows: suprapubic lithotomy, 116; lithotrity 29; lithotrity as a rule, 28; lithotrity for small stones, otherwise suprapubic, 51; almost always suprapubic, sometimes lithotrity, 8; lateral lithotomy occasionally, especially when the urine is foul, 2; with foul cystitis suprapubic lithotomy in two stages, 1; formerly lateral lithotomy, of late suprapubic, 1; if the stone is large median urethrotomy with crushing, 1; if the stone is small median or lateral lithotomy, if large suprapubic, 1; lithotrity except with sacculation or sepsis, then suprapubic, 1; lithotrity if possible, if not suprapubic lithotomy, 1.

These returns show that surgeons are prepared to consider the advisability of performing lithotrity in the adult more frequently than in boys, but the number of those who practise the suprapubic operation is in excess of those who use lithotrity, and of these a large number reserve it for small stones, doing the suprapubic operation for large ones.

QUESTION 3.—What method do you adopt when there is evidence of prostatic enlargement?

224 replies: suprapubic lithotomy, 202; lithotrity if possible, 16; other modifications, 6

For these cases, then, suprapubic lithotomy is the method adopted by almost all surgeons. Of the sixteen who advocate lithotrity all make reservations to their statement. Curiously only two make any reference to removing the prostate at the same time as the stone. Possibly such reference may have been looked upon as irrelevant, information on this point not being asked for in the question.

If we consult the principal surgical textbooks we find a somewhat different view: they all more or less recommend lithotrity. A. T. Cabot, who writes the article on stone in Keen's *Surgery*, says that litholapaxy should be employed in all cases when the urethra will admit instruments. If the stone is too large to be grasped by the lithotrite, or too hard to be crushed, the attempt should be abandoned, and a cutting operation resorted to. "Litholapaxy," he says, "is the operation of choice in adults."

H. G. KYLE.

Reviews of Books.

Chronicles of Pharmacy. By A. C. WOOTTON. Two Volumes. Pp. xii., 428; 332. London: Macmillan & Co. Ltd. 1910.

It cannot be said of the present age, as St. Paul said of the Athenians, that we spend our time in nothing else but either to tell or to hear some new thing, for simultaneously with

the intense interest which modern discoveries excite there has grown up an eager desire to throw ourselves back into the past, to learn what our ancestors thought and did, and to trace to their very sources the springs of all our knowledge.

The two volumes before us deal with the chronicles of pharmacy from the dim dawn of early Egyptian mythology to the present age of great chemists and synthetic remedies. It is a matter of deep regret that the author did not live to see his work completed, and to enjoy the praise and welcome it deserves.

The volumes, which are well printed, have a good index and many illustrations. They cover a wide field, and deal with pharmacy not only in its strict meaning, but in its relation to medicine, toxicology, magic, and even poetry, and thus impart an interest which will be shared alike by the general reader and the specialist.

As the author himself says in the preface, "he has been tempted into various by-paths." In no case, however, is his information irrelevant, but it adds delight to profit, and the pleasant style enhances the value of the work. It has, moreover, the advantage that the chapters need not be read consecutively. They can be taken up in almost any order, and thus ensure to the busy man many a pleasant half hour. It appeals, as has been said, to a wide circle of readers. Thus the student of Shakespeare will find much to interest him in the chapter on "Shakespeare's Pharmacy," with its discussion on the nature of the "juice of cursed Hebenon," and the reference to the poet's son-in-law Dr. John Hall's method of practice. The biblical scholar will turn with interest to the chapter on the "Pharmacy of the Bible," which throws much light on the exact nature of many of the plants therein mentioned, and records the fierce controversies which have often been waged over their identity, the contention of St. Augustine that Jonah's gourd was the ivy having led from words to blows with his saintly antagonist St. Jerome. The folklorist and the historian, the chemist and physiologist, will be equally interested, and the wonder of the psychologist will be aroused at the extent of human credulity, for the sufferings of our ancestors at the hands of the surgeons in pre-anæsthetic days almost pale before their patient endurance in swallowing the loathsome remedies of the ancient pharmacists, many of whose concoctions can only be equalled by the contents of the witches' cauldron in *Macbeth*.

A Practical Guide to the Newer Remedies. By J. M. FORTESCUE-BRICKDALE, M.A., M.D. Pp. viii., 273. Bristol: John Wright & Sons Ltd. 1910.

The necessity for a book upon the newer remedies, written by a medical man without trace of proprietary or pecuniary bias,

is quite obvious to medical men. Then why has not some such book appeared before ? Undoubtedly because of the numerous and great difficulties that the author has to face at every point. At the outset there is the difficulty of selecting an arrangement that will allow of the drugs, so numerous and so diverse, falling into logical grouping. The author has to decide what constitutes a new drug, to decide the inclusions and exclusions, to weigh the worth of the pharmacological and clinical reports upon these drugs ; and in no branch of medical literature has so much been written that is weighty and valuable in appearance and so worthless and misleading in fact as on the pharmacology and therapeutics of the synthetic newer remedies. We must say at once that he has surmounted these difficulties in a wholly admirable way. Those who know this author's book, written in collaboration with Professor Francis, *The Chemical Basis of Pharmacology*, will recognise that he is pre-eminently fitted to deal with the new synthetic drugs. In this volume, however, he has wisely followed the classification of the most recent textbooks on pharmacology, rather than a purely chemical basis, with the result that his book forms an invaluable appendix to these textbooks.

The literature upon this subject is enormous, and widely scattered over medical journals, theses and so on, and the labour of sifting and condensing this literature must have occupied a very large amount of time ; yet in spite of the enormous concentration to which the material has been subjected, Dr. Fortescue-Brickdale has given us a book which is delightfully readable—indeed, many will find that they continue to read long after they have secured the particular details for which they consulted the book.

This is no mere catalogue of proprietary preparations, with extracts from suspiciously favourable and enthusiastic articles, but the author has added useful introductions to certain chapters, and shown clearly the positions of the drugs in therapeutics. The book is a valuable addition to the bookshelves of the medical practitioner, and will take its place at once amongst those volumes to which frequent reference is made. Dr. Fortescue-Brickdale trusts that this book "will be a frequent if humble adviser in the hands of some of his junior professional brethren." We believe it will have a large sale.

The author refrains from giving his own personal experience of any of these newer remedies, and at times we feel some disappointment in not finding a more definite pronouncement on the value of a drug ; but his attitude is scientifically correct, and fully justified.

There are few adverse criticisms to be made, and of these the majority depend upon facts for which the author is not

responsible. But he is responsible for attributing to the *B. P. Codex* the power of giving a drug an official name (p. 96). This power rests only in the *B. P.*, for this country at any rate. No doubt the slip was due to confusion between British Pharmacopœia and British Pharmaceutical. Dr. Fortescue-Brickdale's classification of hypnotics has little advantage over a purely chemical one to which we are accustomed, and it has certain disadvantages. The division is into five groups: those which are dangerous, those presenting no advantages, mild hypnotics, medium hypnotics and powerful hypnotics. The literature on the relative "power" of the newer hypnotics is so meagre that such classification is not justified, and moreover the grouping of certain drugs as definitely dangerous implies a guarantee that those not included in that group are not definitely dangerous, a conclusion by no means justified as yet in regard to some of those not included under that damning heading.

The Introduction, unlike the vast majority of Introductions, is one of the most valuable chapters in the book, for in it the author urges a broad view of therapeutics, and adopts a sound and liberal attitude towards the newer remedies. However much a practitioner may have read about the older remedies, gradually he comes to base his practice upon his experience derived from careful observation of his own daily experiments, and in precisely the same way he must learn from personal experiment with the newer remedies. Dr. Fortescue-Brickdale has given us an efficient and reliable guide to first steps in experimenting with these drugs. As lecturer on Pharmacology to the University of Oxford, his remarks in this Introduction upon the teaching of pharmacology, and the unfortunate position allotted to it in the medical curriculum, come with weight and deserve careful consideration.

The size of the book is handy, and we do not need to say more than that the "get up" is fully up to that high standard which Messrs. John Wright and Sons have accustomed us to expect.

Urinary Surgery. By FRANK KIDD, M.B., B.C., F.R.C.S. Pp. xvi., 429. London: Longmans, Green & Co. 1910.

This book is an excellent review of urinary surgery, surveying almost completely all the modern methods and advances made in this subject, particularly in the direction of the estimation of the functional capacity of the kidneys by means of ureteral catheterisation, in the bacteriology of the urine, and in the value of the X-rays and the development of the clinical interpretation of their shadows.

The classifications are good, and etiology, pathology, the

most important signs and symptoms, and diagnosis, prognosis and treatment are dealt with in a concise and orderly manner.

It co-ordinates the many advances made in urinary surgery which has converted it from a groping in the dark into almost an exact science, and will therefore be found a most useful book from the general practitioner's point of view, and for those entering for the higher surgical examinations.

Medical Examination of Schools and Scholars. Edited by T. N. KELYNACK, M.D. Pp. xvi., 434. London: P. S. King & Son. 1910.

As is pointed out by Sir Lauder Brunton in the Introduction, "this volume consists of a collection of studies by experts," and in consequence it has many of the advantages and some of the defects which one would expect to find in such a collection.

At a time when the results of medical inspection of school children in England are to a large extent a problem of the future, the various authors have had to confine their remarks in the main either to an exposition of the various parts of the Education (Administrative Provisions) Act of 1907, or to an account of the methods in which they have themselves set about carrying out the provisions of that Act. There are, in addition, many interesting chapters dealing with voluntary medical inspection in preparatory and secondary schools, and the progress of medical inspection in various foreign countries, notably the United States of America and Germany.

It is unfortunate that the degree of detail with which each subject is treated varies considerably. The very important question of the correlation of the School Medical Service with the Public Health Service is dealt with in eight pages, though it might have been expanded with very great advantage, *e.g.* an attempt might have been made to define the responsibilities of each service in the matter of infectious diseases in schools, a point which is not at all clear in the various circulars and memoranda which have been issued from the Medical Department of the Board of Education. The chapter dealing with the very important subject of "Dental Conditions in Elementary School Children" seems also far too brief for a volume of this size. On the other hand, the article on "Eyes and Eyesight of School Children" forms a treatise of forty pages of very valuable information, which cannot possibly be utilised to its fullest advantage by the ordinary medical inspector (as distinct from the expert ophthalmic inspector), who has to examine from twenty to thirty children in one school attendance.

It is interesting to note in the chapter on "The General

Routine Medical Examination of School Children" that the writer insists that medical inspectors should be men or women of wide clinical experience—surely a plea that they should be selected from those who are actually engaged in consulting or general practice.

Amongst others, those chapters dealing with "Medical Inspection in Secondary Schools," "Medical Supervision of Games, etc.," "Mentally Defective Children," "School Clinics," "The Feeding of School Children," and "Open-air Schools," form very interesting reading.

A Prescriber's Companion. By THOMAS D. SAVILL, M.D. Fourth Edition. Revised by the AUTHOR, assisted by CHARLES F. HARFORD, M.D. Pp. 59. London: Henry J. Glaisher. 1910.—This booklet, revised by the request of and approved by the late Dr. Savill, is a *multum in parvo*, which should be very useful to those who in these days place their trust for the most part in vaccines, and neglect the art of prescribing drugs as they have been used in days which are passing. The prescriptions are founded on the accumulated experience of a lifetime, and much miscellaneous information in Part II, on disinfection, antidotes, infant feeding, contagious diseases, etc., and vaccines, may help a tyro out of many difficulties.

Alcohol and Alpinism. By Dr. L. SCHNYDER. Authorised translation by S. G. RICHARDS. Pp. 83. Edinburgh: William Green and Sons. 1910.—In a small volume we get the results of the author's investigations into the value of alcohol to climbers. Having his own opinions as the result of laboratory experiments, he obtained the opinions of over 500 prominent Alpinists of all nationalities, most of them scientific or medical men. The book is chiefly composed of these opinions and the author's commentary. Though at first sight such a book may seem unnecessary, such is by no means the case. Climbing is an increasingly popular sport. And in no other sport are the details of equipment so vitally important. So serious, if not avoided, are some of the dangers of the finest of all sports that it is only strict attention to every factor which makes for safety that ensures it being a sport for prudent men. The verdict of the majority is distinctly against the use of any form of alcohol while actually climbing. The stimulus is very short lived, and the subsequent depression even greater than at ordinary levels. Cold and exhaustion are best met by suitable feeding. Death from exposure on the mountain-side, as the result of a storm or being benighted, would be far less common if climbers carried extra Shetland wool underclothing, and left their brandy flasks below. Nothing is more certain than that most Alpine accidents are preventable, and mostly the results of

carelessness. Alcohol undoubtedly lessens the caution which should form a large part of the mountaineer's disposition, and its use is to be discouraged. The traditional bottle of champagne on the summit is by no means without its dangers. Too many accidents have occurred shortly after the descent has commenced. We are the last to deny that alcohol has some uses. Under certain circumstances a temporary stimulant is most useful. A young novice this summer, as the result of his own carelessness, fell into a crevasse on the Pic D'Arolla. He was extricated with difficulty after hanging on the rope for fifteen minutes. With fright and cold his condition was pitiable. He talked of immediate descent. But as this would have been dangerous, and the remainder of the climb was easy, he was well stimulated, and recovered enough pluck to reach the summit and descend by a safer way. Also after a trying day the use of a little wine to aid digestion is often quite wise as food is the best antidote to fatigue. This volume is a useful addition to the Alpine Library.

Johns Hopkins Hospital Reports. Vol. XV. Baltimore: The Johns Hopkins Press. 1910.—This volume testifies to the excellence of the work done at the Johns Hopkins Hospital, and provokes the thought that what is being done at Baltimore might be done in Bristol. The requisite clinical material is to hand, but the records kept are not yet good enough, and not everyone in a position to make use of case records realises as yet that it is his duty to do so *pro bono publico*. The first paper, by J. H. Mason Knox and Edwin H. Schorer, attempts to correlate clinical and bacteriological dates in the summer diarrhœa of infants. Some variety of B. dysenteriæ were present in 58 per cent. of the seventy-four cases studied; in 22.9 per cent. streptococci were found. Treatment with serum was not satisfactory, probably because the usual serum corresponds with the Shiga variety of B. dysenteriæ, which was not found many times. The worst cases were those in which more than one type of dysentery bacillus was recovered from the stools; those with streptococci only were not severely ill. The mortality rate was more than twice as high in infants who had been fed on condensed milk as in those fed on cows' milk. Twelve papers next following deal with various aspects of lobar pneumonia and pneumococcal infection. These yield a vast mass of statistical and other data, of which a few may be quoted. The mortality rate in Baltimore is high, 25 per cent. if terminal pneumonias be included; in eighty-seven cases subjected to open-air treatment the mortality was 10 per cent. In the *post-mortem* cases the right lung was pneumonic four times as often as the left. There is practically always some leucocytosis; its absence is usually a bad sign, liable to be noted in cases of

terminal pneumonia. An article on the successful termination of pneumonia, by C. P. Emerson, emphasises the risk of severe and even fatal collapse in crisis. The pneumococcal type of endocarditis is, as H. T. Marshall shows, particularly prone to attack the aortic and tricuspid rather than the mitral valves. J. A. Chatard's paper on acute pericarditis complicating lobar pneumonia shows that it is a serious feature, and that its origin lies at least as often in blood infection as in direct transmission from pleura to pericardium. In Thomas McCrae's paper on empyema complicating pneumonia it is somewhat astonishing to read that the heart was not displaced to any extent in a single case. Steiner reports three cases of venous thrombosis in 658 cases of pneumonia, all in the veins of the lower limb, and summarises the literature. The subject of pneumococcal arthritis is dealt with by C. P. Howard, and F. M. Hanes describes twenty-five cases of pneumococcal meningitis, all fatal. The clinical picture varies, but presents no special feature apart from the insidious onset. Delayed resolution in the pneumonic lung does not, according to Thomas McCrae, occur specially in feeble subjects; the cautious use of X.-rays is of distinct benefit. The other two papers are very long. The first is a review of 550 cases of skin transplantation, by John Staige Davis, with a full account of the technique in use at the Johns Hopkins Hospital, and a good summary of the literature. F. J. Sladen, in the last paper, gives a very complete description of experiences in the treatment of meningococcal meningitis. Of twenty-three cases treated with Flexner's serum only fourteen died; while of twenty-three cases treated before the introduction of serum twenty-one were fatal. This paper should be consulted by anyone who has to treat cases of cerebrospinal meningitis.

Some Considerations of Medical Education. By S. Squire Sprigge, M.A., M.D. Pp. x., 99. London: Baillière, Tindall & Cox. 1910.—We have in this small work a most interesting and lucid account of the many changes which have taken place in the education of the medical student in recent years. The ever increasing amount of special knowledge which the rapid advances of science have made it necessary for the embryo medico to acquire has rendered some rearrangement of the curriculum imperative. The author explains that the lightening of the burden is being obtained by, on the one hand, an earlier specialisation of education, so that the elementary science subjects are being taught at the Public Schools, and on the other by a lengthening of the curriculum. The arguments in favour of these alternatives are given in some detail. Due notice is taken of the relative disadvantages under which the London student suffers in obtaining a medical degree. The question of the advisability of a one portal system is also discussed.

The author insists that the General Medical Council, although labouring under difficulties, not the least of which is the fact that the registration of students is not compulsory, has done and is doing good work. We can heartily recommend this book to the large class to whom the subject is of interest as an unbiased and practical view of the various problems involved.

Meningitis, Sinus Thrombosis, and Abscess of the Brain. By JOHN WYLLIE, M.D. Pp. ix., 258. London: H. K. Lewis. 1911.—The difficulties in the early differential diagnosis of intracranial infections fully justify the appearance of a work of this nature, but we do not think that the author has been altogether successful in the task which he has set himself. The general symptomatology is clearly given and is that generally accepted, but when special points are treated the same success is not evident. The anatomy of the petrous bone has always been a stumbling-block, but such a statement as "injury to the auditory nerve in the Fallopian tube" is topographically misleading. The use of the word tympanum where tympanic membrane is meant is also confusing. The description of Bárány's (here spelt Bardny) vestibular test is insufficient in detail to make it useful to those who have never seen it employed. Spinal puncture is well given, but the inclusion of spinal anæsthesia in a work of this nature is a step of doubtful utility. The appendix on the nasal accessory sinuses, in which œdema and swelling of the cheek are given as prominent signs in antral suppuration, and the sphenoidal sinus is made to open into the superior meatus, is scarcely sufficiently full or accurate to serve a useful purpose.

Clinical Pathology in Practice. By THOMAS T. HORDER, M.D., F.R.C.P. Pp. viii., 216. London: Oxford Medical Publications. 1910.—The aim of this book is to lay before the practitioner the various modern methods which may be used in the clinical elucidation of disease from a pathological aspect, while not being in any sense a systematic account of pathology. Good descriptions are given of how the necessary materials are to be collected, and the interpretations to be derived from investigating these are fully considered. Chapters are devoted to the examination of the different fluids which may be obtained by puncture, while others are devoted to such subjects as the diagnosis of tuberculosis and its specific treatment, to the various specific serum tests, to vaccine therapy, to the investigation of fever which is not associated with other physical signs. Useful illustrations are inserted throughout the text. The book is one which should be of much value to all who are not fully conversant with such procedures.

Editorial Notes.

Sickness and Invalidity Bill, 1911.

No medical journal can be silent on this question; the outcry on all hands is acute. It is said that it is too soon to cry out, but probably it will be useless to do so later: it must be now or never.

The doctors are said to be dissatisfied with the present proposals, and no wonder. It would be intolerable to perpetuate the abuses of the present club system in a greatly extended Government scheme. Medical men naturally will object to their work being almost entirely through the Friendly Societies; they object to a capitation contract per annum; they claim that the public shall have a free choice of doctor, and that the payment should be by visit. They claim also that a uniform rate of payment is not reasonable, that many extras should be possible, and that a special advisory committee will be necessary to adjudicate on these, and that, further, a special Arbitration Board for the settlement of disputes will be essential.

We have to thank Dr. Harry Gray for the following criticism on the present aspects of things, but these vary from week to week, and will be much discussed before the Government scheme becomes more concrete.

"The Government Sickness and Invalidity Bill introduced in the House of Commons on May 4th deserves the close attention of all medical men. A close scrutiny of its provisions for medical attendance might lead one to imagine that the Chancellor of the Exchequer had relied on the altruism of the medical profession to over-rule consideration of its own interests. The average general practitioner, at any rate, is so cognisant of the blessings which sick and invalidity insurance will put within reach of all classes of the community that it requires some fortitude to raise a dissentient voice amid the general chorus of praise and congratulation.

"The effect of the Bill on medical practice may be considered in two directions. First, financially, will the profession

benefit? In so far as some millions of persons who have hitherto gone without medical attendance, or obtained it without paying for it, will now become contributors to the medical income, the profession stands to gain both work and pay. Some financial gain should also result from the doctor's being relieved of the cost of providing drugs. The Chancellor will no doubt consider this a makeweight for the small premium which he proposes should be raised from 4s. (which he takes as the usual) to 5s. The prospective gain here, however, is chimerical. In the first place, the average 4s. capitation grant is the nominal and not the real rate. In most Friendly Societies there is generally a minority of members who pay for the club doctor, but employ private practitioners, so that if the nominal rate is taken as 4s. the real rate will vary from 4s. 6d. to 7s. 6d. Free choice of doctor, which the profession is inclined to insist on, makes the nominal rate the real one. Further, instead of gain, there is likely to be loss in the conversion of the club member into a State protégé, inasmuch as the medical services required by the State will probably be greater than those generally given under the contract system. This is the weak point also in the British Medical Association's Provident Service, which takes no account of this lowering of remuneration and increase of service entailed by admitting the principle of free choice of doctor. Since on the credit side we must place the conversion of some non-payers into payers, we must place on the debit side the fact that several millions (the entire population if it so wills, including the Chancellor himself) who have hitherto paid the doctor ordinary or even good fees will become club patients at the contract rate. To those practitioners whose practice consists entirely, or almost entirely, of contract work, and whose position is rather that of whole-time salaried officers, the State Bill may make practically no difference. The gain of 1s. per head and relief from the cost of drugs will be discounted by the extra attendance required, and it is likely that their actual income and work will remain the same, owing to the defections brought about by freedom of choice of doctor.

"In the case of other practitioners, the financial gain or loss

will depend chiefly on the proportion of their club to private work. The larger the number of their paying private patients converted into State beneficiaries at a capitation rate, the greater will be their loss; whereas in a practice consisting almost entirely of clubs and poor patients, with a large proportion of bad debts, some relief may accrue from the operation of the National Insurance Scheme.

"More important, however, than the question of financial gain or loss is that of the effect likely to be produced on the conditions of practice, and the outlook here is still more unpromising. There has been a noticeable tendency in recent years to minimise the inherent defects of the capitation system; the 'battle of the clubs' has become chronic, and its interest wanes; the increasing stress of competition, making any kind of 'appointment' appear desirable, has placed the question of remuneration in such a prominent position as to make one forget that there were, and always must be, other disabilities of practice under the capitation system. The essence of the club contract is insurance. With everyone obtaining medical service on the club system the old relation between doctor and patient, of helper and helped, is modified by the new bond of insurer and insured; for it is not the State which will insure the beneficiary against the cost of medical services, but the doctor who becomes an underwriter or one-man insurance company. It is inevitable that the relation of insurer and insured should tinge the dealings of doctor and patient: a scrutiny on the one hand as to the services demanded in return for the premium offered, and on the other as to the service received for the premium paid. This has in time past been the bane of club practice, and it is difficult to see how it can be got rid of in the new regime.

"It may be some little advantage to the profession in the way of preventing overstocking, that with universal club service the possible income of the medical practitioner will be very accurately defined. The available patients in the country divided among the present number of doctors gives to each a clientèle of 1,400; 1,400 patients at 5s. per head means a

possible income of £350 a year gross. In rural districts, with a motor-car or even a modest horse turn-out, this leaves but a beggarly income for a professional man, and it is likely that when the return for capital and brains is so accurately defined, there will be a still further falling-off in the entries at the medical schools. This, indeed, is the only hope for the profession of medicine—that economic laws will bring just retribution upon the attempt to sweat a learned profession. But even if ground may eventually be regained in this direction, the blow to the old position of the doctor as a family friend will never be recovered from. A new *régime* opens before us. What standing we shall have under it twenty years hence it is impossible to forecast."

* * * * *

Laryngological Section of the Royal Society of Medicine.

A LARGE and distinguished gathering of specialists in this branch of medicine journeyed to Bristol on Friday, June 2nd, from London and the provinces at the invitation of the President (Dr. Watson Williams), to attend a meeting of the section held by the kindness of the Council of the University and Professor Francis, in the new Chemical Wing. Much interest was shown by the visitors in the size and general excellence of arrangement of our new buildings.

An extensive and interesting programme was arranged, embracing demonstrations of methods of diagnosis and treatment, exhibition of cases and specimens, and a discussion on a subject of common interest to the rhinologist and ophthalmologist. Those who saw the demonstration of bronchoscopy by Dr. Watson Williams for the first time must have been surprised to see with what ease and certainty the direct examination of the lower air passages can be carried out by the experienced.

Although direct examination of the œsophagus has now been in use for a considerable period, it is only recently that a satisfactory method of gastroscopy has been perfected, so that a demonstration by Drs. Hill and Herschell on the living subject of the method which they have devised caused a great deal of

interest. By means of an instrument on the plan of a cystoscope passed through a modified Killian's tube, they are able to inspect the whole extent of the gastric mucosa, and those of us who had the opportunity of seeing this demonstration will agree that the view obtained leaves little to desire. In skilled hands this method should prove a real advance in the diagnosis of gastric conditions.

Dr. Finzi also demonstrated on a patient the method of applying radium to a carcinomatous gullet, and the results hitherto published seem to show that radium so applied can produce alleviation of symptoms, and sometimes perhaps even cure.

Dr. Finzi and Mr. C. F. Walters also showed a case of great interest, in which an inoperable tumour of the cheek (probably endothelioma) had disappeared under the application of radium. Among other cases shown was a series showing the result of the President's osteoplastic frontal sinus operation, on the results of which he was heartily congratulated. During the meeting which followed the exhibition of cases and demonstrations, the President handed to Sir Felix Semon a volume commemorating the formation of a Semon Lectureship in Laryngology at London University, founded with a sum of money collected from colleagues and friends of that distinguished laryngologist on his retirement from active practice.

The meeting ended with a discussion on " The relationship of diseases of the nose and accessory sinuses to affections of the eye and orbit."

The subject was introduced by Dr. St. Clair Thomson with a general outline, illustrated by lantern slides, of the anatomical relations involved and of patients showing some of the conditions mentioned.

Mr. Richardson Cross followed, presenting the subject from the ophthalmologist's point of view. The discussion then became general, and though somewhat curtailed owing to the lateness of the hour, the general consensus of opinion seemed to be that the nasal cavities have not till now received their due attention as a cause of ocular and orbital disease.

The social side of the meeting was as successful as the scientific. The President and Mrs. Watson Williams entertained the Council of the Section and other friends at dinner, and afterwards received the members of the Section and a large number of guests at the Spa.

On Saturday a visit was made to Bath, a luncheon being given to the visitors by Mr. and Miss Pagan Lowe at the Guildhall, followed by an inspection of the Baths. The visit ended with a reception at the Roman Baths by the Mayor and Mayoress of Bath.

Notes on Preparations for the Sick.

Turin International Exhibition, 1911.—Many of our best manufacturing chemists and druggists occupy stands in the British Section of the Turin Exhibition, and medical men will find much to interest them in that portion of the building devoted to chemical and scientific industries. The exhibit of Burroughs, Wellcome & Co. is in particular very attractive.

Perhaps the most interesting novelty exhibited is a synthetic substance which possesses all the physiological characteristics of the supra-renal gland active principle. This product, which has been designated "Epinine," was discovered during researches in the firm's experimental laboratories at Dartford. After considerable clinical trial, it has proved so efficient that it has been placed on the market. Being purely a chemical substance of known composition, it is stable and is uniform in action.

Iodoform gauze was at one time considered to be unique in its own sphere, but a dressing is shown which is said to not only equal it in many ways, but even to surpass it. This new addition to the surgeon's armamentarium is known as "Tabloid" Bismuth Gauze. It is claimed that it excels iodoform gauze in every way, and especially for gynæcological work.

There are several other recent additions to medicine. Among these are "Lodal," a new synthetic substance valuable in uterine hemorrhage, and "Vaporole" Pituitary Extract, which has proved useful in cases of collapse.

A series of photographs of scenes from the "Wellcome" Materia Medica Farm which has been established in Kent is shown. These illustrate the scientific culture of herbs for use in the preparation of the firm's well-known products.

Concentrated Diphtheria Antitoxin.—BURROUGHS, WELLCOME & Co., London. — This preparation of Diphtheria Antitoxin has certain advantages over the ordinary diphtheria antitoxin serum. It is prepared at the Wellcome Physiological Research Laboratories according to the latest approved methods of salt-precipitation. On account of its concentration large doses can be given in comparatively small volume, a point of considerable importance, since large doses of antitoxin are the rule in the treatment of diphtheria, and the bulk of the serum is a factor which may militate against their being given. It is stated by some authorities that sera treated by the method used in preparing "Wellcome" Concentrated Diphtheria Antitoxin are less liable than the ordinary unconcentrated sera to produce rashes and other undesirable symptoms in susceptible patients. "Wellcome" Brand Concentrated Diphtheria Antitoxin is issued in hermetically-sealed phials of 1,000, 2,000, 3,000, 4,000 and 5,000 Ehrlich-Behring units, each 1,000 units being contained in 1 c.c. or less of fluid.

Soloid Nizin.—BURROUGHS, WELLCOME & Co., London.—"Nizin," a zinc salt of sulphanilic acid, is a valuable antiseptic, readily soluble in water, and in solutions of the strengths recommended produces neither irritation nor toxic effects.

Clinical reports prove the great value of "Nizin" in gonorrhœa. It can be injected safely in the acute inflammatory stage. Urethral and vaginal injections of solutions of a strength of 2 to 6 grains to the ounce have proved very successful. A solution of a similar strength forms an excellent stimulating antiseptic application for use in indolent ulcers. Weaker solutions are employed in gonorrhœal ophthalmia, conjunctivitis and other eye affections.

"Soloid Nizin" affords a ready and convenient means of preparing fresh solutions for injections and eye lotions in the strengths of gr. 2 and gr. 20, the former in bottles of 100 and the latter in bottles of 25.

Chapman's "Entire Wheat" Food.—CHAPMAN'S FOOD CO., Christchurch, Hants.—This preparation is intended for the use of children of seven months and upwards and for invalids. An analysis shows it to be a farinaceous food, containing proteid matter in considerable amount. An examination of the inorganic residue left after burning off the organic matter revealed the presence of phosphates in considerable amount. An excellent feature of the food is the absence of added sweetening matter, which so often spoils otherwise desirable preparations.

Chapman's "Malted Food."—This preparation differs from the "Entire Wheat" Food in containing malted barley, and is thus suitable for younger children who are unable to digest the ordinary starch-containing foods. Both this and the unmalted food can be recommended as satisfactory foods at a moderate price.

Standard Wholemeal Biscuits.—MACFARLANE, LANG & CO., Fulham, London.—The name Standard appears now to be looked upon as the acme of excellence, and these biscuits, manufactured from stone-ground flour and containing all the food value of the whole wheat, are suitably sweetened, crisp and palatable. They are certainly good and agreeable; but we fail to see why bread and biscuit eaters should be limited to one variety of either, as seems to be desired by the puffing advertisements of wholemeal bread.

Pulverettes and Palatinoids.—OPPENHEIMER, SON & CO. LTD., 179 Queen Victoria Street, London.—**Calcium Iodide Pulverettes.**—This drug is nauseous in taste, and deteriorates rapidly when exposed to the air. In pulverette form it is protected from the atmosphere, and may be swallowed tastelessly. In doses of 5 to 15 grains they have recently given excellent results in cases of diabetes, sometimes when dieting and Codeine treatment have failed. They are free from sugar.

Calcium Permanganate, gr. ¼.—This salt is very deliquescent, and has an acrid, nauseous taste. The hermetically-sealed jujube surmounts both difficulties, and the contents being in a loose condition diluted with an inert powder are readily absorbed.

Iodsam gr. 3 (25 per cent. Iodine).—This pulverette contains the iodine in a peppermint-flavoured oil basis, and is equivalent to one grain of Potassium Iodide.

Filmaron (the active principle of male fern) Palatinoid.—Three of these taken fasting and followed by a dose of castor oil one hour later are an efficient dose for the expulsion of tapeworm. They have none of the objections of the ordinary preparation of male fern.

"Aseptule" Sea-water Plasma.—OPPENHEIMER, SON & CO. LTD., 179 Queen Victoria Street, London.—In the *Medical Annual*, 1910, Dr. Robert Simon, Paris, published some remarkable results which he obtained after extended trial with subcutaneous injection of diluted sea-water.

It proved to be an exceedingly powerful tonic and alterative, restoring appetite, digestion and sleep, correcting old standing neuroses, promoting healing of wounds, improving tuberculous

esions, checking marasmus and gastro-entritis in infants, and exerting a powerful curative influence on various skin diseases.

It is said to exercise an absolute, rapid and radical effect on the following diseases:—(1) acute gastro-intestinal affections of infancy, (2) digestive disorders of adults and the resulting neuroses, (3) skin diseases.

Messrs. Oppenheimer have completed arrangements whereby the sea-water is collected at frequent intervals 200 miles from land (in the deep North Sea) under strictly aseptic conditions. It is sterilised by filtration through a porcelain filter, and rendered isotonic with the blood; it is issued in Aseptules of 30, 50 and 100 c.c. capacity.

We fail to see on what grounds diluted sea-water should be glorified by the designation Plasma.

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the List in March.

May 31st, 1911.

American Urological Association (1) .. .. 1 volume.
E. W. Hey Groves (2) .. .. 2 volumes.
L. M. Griffiths .. .. 4 ,,
R. Shingleton Smith, M.D. (3) .. .. .. 1 volume.

Mr. Stephen Paget (per Dr. Shingleton Smith) has given an unframed picture of his distinguished father, Sir James Paget, Bart.

EIGHTIETH LIST OF BOOKS.

The titles of books mentioned in previous lists are not repeated.

The figures in brackets refer to the figures after the names of the donors, and show by whom the volumes are presented. The books to which no such figures are attached have either been bought from the Library Fund, or received through the *Journal*.

Cattell, H. W. .. .. *Lippincott's New Medical Dictionary* 1910
Corner, E. M. .. .. *The Life-History, Function, and Inflammation of the Appendix* 1911
Darier, A. .. .. *Ophthalmic Therapeutics.* (Tran. by S. Stephenson) 1911
Ehrlich, P. .. .. *Abhandlungen über Salvarsan* .. .. (2) 1911
Ehrlich and S. Hata, P. *The Experimental Chemotherapy of Spirilloses.* (Tr. by A. Newbold and revised by R. W. Felkin) 1911

Hata, P. Ehrlich and S. *The Experimental Chemotherapy of Spirilloses.* (Tr. by A. Newbold and revised by R. W. Felkin) 1911
Hewlett, R. T. .. .. *Serum and Vaccine Therapy* .. 2nd Ed. 1910
Hutchinson, Sir F. Treves and J. *Student's Handbook of Surgical Operations* .. .. 3rd Ed. 1911
Jones, D. W. C. .. *Introduction to Therapeutic Inoculation* .. 1911
Kelynack, T. N. [Ed.] *The Drink Problem* .. .. (3) [1907]
Kerr, J. M. M. .. .. *Operative Midwifery* 1908
Low, R. C. .. .. *Carbonic Acid Snow* 1911
Macilwaine, S. W. .. *Medical Revolution* 1911
May, P. .. .. .. *The Chemistry of Synthetic Drugs* 1911
Miles, A. Thomson and A. *Manual of Surgery* .. 2 vols. 3rd Ed. 1909
Miller, R. .. .. .. *The Medical Diseases of Children* 1911
New and Unofficial Remedies 1911
Shenton, E. W. H. .. *Disease in Bone and its Detection by the X-rays* 1911
Smith, J. S. K. .. *Lateral Curvature of the Spine and Flat-foot* 1911
Sutton, J. B. .. .. *Tumours, Innocent and Malignant* 5th Ed. 1911
Thomson and A. Miles, A. *Manual of Surgery* .. 2 vols. 3rd Ed. 1909
Treves and J. Hutchinson, Sir F. *Student's Handbook of Surgical Operations* .. .. 3rd Ed. 1911
Vittoz, R. .. .. .. *Treatment of Neurasthenia.* (Trans. by H. B. Brooke) 1911
Walker, N. .. .. *An Introduction to Dermatology* .. 5th Ed. 1911
Webster, J. C. .. .. *Female Pelvic Anatomy* 1892
Wechselmann, W. .. *The Treatment of Syphilis with Salvarsan.* (Trans. by A. L. Wolbarst) .. .. .. [1911]

TRANSACTIONS, REPORTS, JOURNALS, &c.

American Association of Genito-Urinary Surgeons, Transactions of the .. .. Vol. V 1910
American Journal of Obstetrics, The .. .. Vol. LXII 1910
American Journal of Ophthalmology, The .. .. Vol. XXVII 1910
American Journal of Surgery .. .. Vol. XXIV 1910
American Medicine .. .. Vol. XVI 1910
American Pediatric Society, Transactions of the .. Vol. XXII 1910
American Surgical Association, Transactions of the Vol. XXVIII 1910
American Urological Association, Transactions of the (1) Vol. IV 1910
Annales de Dermatologie .. .. 5th ser., Tom. I 1910
Archiv für klinische Chirurgie .. .. .. Bds. XCII, XCIII 1910
Archives of Pediatrics .. .. Vol. XXVII 1910
Association of American Physicians, Transactions of the Vol. XXV 1910
Boston Medical and Surgical Journal, The .. .. .. Vol. CLXIII 1910
British Journal of Children's Diseases, The .. .. .. Vol. VII 1911
British Journal of Dermatology, The .. .. Vol. XXII 1910
British Journal of Tuberculosis .. .. Vol. IV 1910
Bulletin de l'Académie de Médecine .. .. Tom. LXIII, LXIV 1910

Bulletin de l'Academie royale de Médecine	Tom. XXIV	1910
Bulletin de la Société française de Dermatologie		1910
Deutsche Zeitschrift für Chirurgie	Bds. CV–CVII	1910
Écho medical du Nord, L'		1910
Gazette hebdomadaire des Sciences medicales de Bordeaux	Tom. XXXI	1910
Hospitals and Charities, Burdett's		1910
Hospitals—		
Johns Hopkins Hospital Reports	Vol. XVI	1911
St. Bartholomew's Hospital Reports	Vol. XLVI	1911
Indian Medical Gazette, The	Vol. XLV	1910
International Clinics	2nd ser., Vols. I–III	1893
Jahreskurse für arztliche Fortbildung	(2)	1910
Johns Hopkins Hospital Bulletin, The	Vol. XXI	1910
Journal of Experimental Medicine, The	Vol. XII	1910
Journal of Hygiene	Vol. X	1910
Journal of Laryngology, The	Vol. XXV	1910
Journal of Medical Research, The	Vol. XXIII	1910
Journal of Mental Science, The	Vol. LVI	1910
Journal of Nervous and Mental Disease, The	Vol. XXXVII	1910
Journal of Obstetrics and Gynæcology, The	Vol. XVIII	1910
Journal of the Royal Sanitary Institute	Vol. XXXI	1910
Journal of Tropical Medicine, The	Vol. XIII	1910
Laboratory Reports of the Royal College of Physicians of Edinburgh	Vols. X, XI	1911
Library Association Record, The	Vol. XII	1910
Library, The	3rd ser., Vol. I	1910
Medical Chronicle, The	4th ser., Vol. XX	1911
Medical Library and Historical Journal	Vol. V	1907
Medical Libraries	Vols. III–V	1901–2
Montreal Medical Journal, The	Vol. XXXIX	[1910]
Parasitology	Vol. III	1910
Progrès médical, Le		1910
Progressive Medicine	Vol. I	1911
Revue de Chirurgie	Bd. XLII	1910
Revue de Gynécologie	Tom. XIV	1910
Revue de Thérapeutique		1910
Revue générale d'Ophtalmologie	Tom. XXIX	1910
St. Peterburger medicinische Wochenschrift		1910
Smithsonian Institution, Report for		1909
Surgery, Gynecology and Obstetrics	Vol. XI	1910
Therapeutic Gazette, The	Vol. XXXIV	1910
Univ. of Penna. Medical Bulletin	Vol. XXIII	1911
Zeitschrift für Urologie	Bd. IV	1910
Zentralblatt für Chirurgie		1910
Zentralblatt für Gynäkologie		1910

MEETINGS OF SOCIETIES.

Bristol Medico-Chirurgical Society.

March 8th, 1911.

Dr. BERTRAM M. H. ROGERS, President, in the Chair.

Mr. E. W. HEY GROVES read a paper on **Resection of Posterior Nerve Roots** for (1) pain, (2) visceral crises, and (3) spasm. The histories of cases of each type—one of each—were given, and the technique of the operation and the results which had been achieved were described. (See page 105.) The paper was discussed by Dr. MICHELL CLARKE.

Dr. D. A. ALEXANDER described a case of **Portal Pyæmia.** The patient had suffered for several years from attacks of abdominal pain resembling (right) renal colic. With such an attack coincided in February, 1910, a sloughing hæmorrhoid, the ostensible source of portal infection. Jaundice was an early symptom; rigors, frequent and severe, continued for three weeks, with hyperpyrexia, ecchymoses, and subcuticular abscesses. There was no hepatic enlargement. Crural thrombosis occurred, eventually with suppuration. In two months, with cardiac exhaustion, free fluid began to collect in the abdomen. The septic process ended with the evacuation of the crural abscess, and the ascites from portal obstruction was relieved by paracentesis. Recovery slowly ensued. No organism could be found in the urine or blood at the beginning of the illness, and thus no autogenous vaccine could be prepared, and that obtained from the streptococcus brevis of the crural abscess came too late for its value to be proved.

Dr. CAREY COOMBS read a paper on the **Histology of the Rheumatic Infection.** The histological changes met with in the four cardinal manifestations of rheumatic infection—polyarthritis, carditis, chorea, and subcutaneous nodes—may be described under the headings "general" and "special." *General.*—The morbid processes at work are proliferation (of endothelium and connective tissue in the formation of capillaries and of certain special cells), exudation (of fibrin, serum and leucocytes, especially of mononuclear types), and degeneration. Three grades of concentration are recognisable: diffuse degeneration of special cells, moderately diffuse leucocytosis and connective-tissue proliferation and formation of "nodules," aggregations of large multinuclear cells on a background of fibrin. *Special.*—In the heart nodules appear deep to the surface in the muscular and both serous layers, which show

the other changes also. Nodes beneath the skin are probably aggregations of nodules. In inflamed joints subendothelial nodules are also found. The brain shows widespread chromatolysis, but no inflammatory changes of any kind. Examination of other organs (kidney, thyroid, etc.) has discovered certain morbid changes, but no inflammatory reaction. Chronic streptococcal malignant endocarditis is unlike rheumatic carditis in histology, but one case of post-scarlatinal carditis proved to be rheumatic in type. Experimental rheumatic lesions are in several essentials closely similar to clinical rheumatic phenomena. The paper was discussed by Drs. SCOTT WILLIAMSON, J. O. SYMES, MICHELL CLARKE and EDGEWORTH.

April 12th, 1911.

Dr. BERTRAM M. H. ROGERS, President, in the Chair.

The President announced that he had been invited to join the Lord Mayor's Coronation Committee as the representative of the Society, this being the first occasion on which the Society had been recognised as a body of public importance.

A letter from the Registrar of the University of Bristol was read giving notice of determination of the agreement made in 1893 with the Society as from March 25th, 1912.

The President explained that the University authorities wished to move the Medical Library from the present room to new premises in the old Blind Asylum buildings, and to provide there another reading-room for the members of the Society in place of that now in use. Meetings would be held in the present room even after the removal of the books. He had no doubt that a new agreement acceptable by both parties would be arrived at. After a short discussion Mr. Munro Smith proposed and Dr. Carey Coombs seconded: "That the Society has full confidence in the Committee's management of this business, and leaves the necessary arrangements in the Committee's hands." This was carried unanimously.

Dr. EDGEWORTH read a paper on **A Family Type of General Œdema.** In infants there occurs a type of general œdema not associated with albuminuria or kidney disease: its origin is obscure, and its result usually fatal. He had recently seen four fatal cases in a single family, in which the disease manifested its presence at ages varying from a few months to three and a half years. The children were not affected simultaneously; six years elapsed between the death of the first and last child.—Dr. W. SWAYNE asked if there was any connection between this

condition and the cases of congenital œdema, with ascites and placental disease in the fœtus.—Dr. CAREY COOMBS inquired whether the manner of death threw any light on the cause.—Dr. E. C. WILLIAMS said the condition was rare. He had seen a case with diarrhœa and tetany, probably an intestinal toxæmia.—Dr. FORTESCUE-BRICKDALE commented on the rarity of the family type. He asked if there was ever effusion into the serous sacs.—Dr. NIXON held that the condition was an urticaria, which explained the non-occurrence of serous effusions.—Dr. SHINGLETON SMITH inquired as to the condition of the thyroid and thymus glands in Dr. Edgeworth's cases, and alluded to sclerema neonatorum as possibly allied.—Dr. EDGEWORTH replied.

Dr. J. O. SYMES showed cases of (1) **Pneumothorax,** (2) **Lateral Sclerosis,** and read a paper entitled **"Some Observations on School Hygiene"** (*vide* p. 109).—Dr. WATSON WILLIAMS questioned the practical value of isolation of infectious exanthemata in school children. He referred to the swimming bath as a vehicle of contagion.—Dr. FORTESCUE-BRICKDALE, commenting on the relative infrequency of tuberculosis among Public School boys, suggested that they were as a rule not sent to school until after the age at which the disease is manifest or suspected.—The PRESIDENT contrasted the morbidity of Public School boys with the inmates of industrial schools. He also spoke of the superior training of the Oxford crew over the Cambridge as shown in this year's boat race.—Dr. E. C. WILLIAMS responded that the defeat of Cambridge was due to a want of speed rather than lack of stamina.—Dr. BRASHER acknowledged that isolation in epidemics was scarcely justified by results, but he had also had experience of the disastrous results of deliberate exposure by parents of their children to acute exanthemata.—Dr. NIXON wondered whether, after all the disadvantages exposed in the discussion, school education was worth while.—Dr. SYMES replied.

Dr. WATSON WILLIAMS read notes of a **Case of an Operation for Suppurative Otitis, with Abscesses of Temporo-sphenoidal and Frontal Lobes,** showing the brain with the abscess cavities.—Dr. BRASHER discussed the case.

Dr. E. C. WILLIAMS read notes of a **Case of Congenital Ataxia,** showing the patient, a child aged 3½ years, to the meeting.

May 10th, 1911.

Dr. BERTRAM M. H. ROGERS, President, in the Chair.

Mr. H. F. MOLE read a paper on **Plication of the Capsule of the Shoulder Joint for Habitual Dislocation.** The history of the

methods of treatment successively adopted for the treatment of habitual dislocation was briefly recounted. The speaker's case was a woman of 24. She was an epileptic, and for two years in these fits the joint had been frequently dislocated, and latterly on other occasions, even as often as three times in one week. He had exposed the capsule by a vertical incision in front between the deltoid and pectoralis major, and exposed the capsule by dividing the subscapularis muscle. No undue laxity of the capsule was detected. Three thick cat-gut sutures were used to pucker the capsule in front. The arm was fixed to the side for three weeks. The muscles were found much atrophied by the end of that time. There had been no recurrence of dislocation to the present time, five months after operation. In that time she had had two fits.—Mr. HEY GROVES doubted if laxity of the capsule was the cause of the dislocations, and thought that the good results of the operation might be due to division of the subscapular and other muscles. It was remarkable how free the joint movements were in the case, and contrasted with the proclivity of this joint to be stiffened by traumatism.—Dr. E. H. STACK alluded to the ease with which stiff shoulder joints could be dislocated by forcible movements.—The PRESIDENT asked if the weakness and wasting of the muscles which were still evident might not account for the absence of dislocation.

Mr. MUNRO SMITH read a paper on **The Prevalence of Local Neuritis and Herpes zoster.** (The paper will be published in a future issue of this *Journal*.) The speaker suggested that acute brachial neuritis was a result of inflammation of the posterior root ganglion and analogous to herpes zoster, and that the inflammation was toxic and due to serous organism.—Mr. JAMES TAYLOR thought that there was a traumatic element in such cases as those described.—Dr. ALEXANDER thought there were cases of neuritis of a similar ætiology to herpes zoster, but without the herpetic eruption.—Dr. J. A. NIXON brought forward evidence derived from the statistics of the Bristol Royal Infirmary to show that herpes zoster occurred in epidemics.—Dr. MICHELL CLARKE pointed out that the pain of herpes zoster might be present for some time before the eruption appeared. He had not found neuritis more common in his practice latterly than formerly. He thought that a posterior root ganglion affection would not explain the motor effects seen in the neuritis cases.—Mr. MUNRO SMITH in reply said that in his cases there were no motor nerve effects beyond a little wasting of muscles from disuse.

Dr. A. RENDLE SHORT read a paper (to be published later in this *Journal*) on **End Results of Operations in the Stomach.**

He surveyed the end results of 164 operations upon the stomach performed at the Bristol Royal Infirmary during the last nine years.—Mr. GROVES spoke of the great value of the statistics which had been collected. In gastro-enterostomy for pelvic lesions the benefit was much less if food continued to pass through the pylorus in considerable quantity, stenosis being absent.

Dr. MICHELL CLARKE showed a case of **Word Blindness.** The patient could write, but could not after a short interval read what he had written. Speech was perfect. There was alexia, but not agraphia. The possible situation of the lesion was explained with the aid of a diagram. The cause was probably a localised softening. The onset of symptoms had been sudden eighteen months previously.

Dr. MICHELL CLARKE also read notes on a **Case of Tumour of the Corpus Callosum**, and showed numerous macroscopical sections of the affected brain.

J. LACY FIRTH.
J. A. NIXON, *Hon. Sec.*

Obituary.

JOHN TATHAM THOMPSON, M.B., C.M. Edin.

THE news of the death of Mr. Tatham Thompson, at the early age of 52, will be received with sincere regret by his professional brethren and many other friends in Bristol and its neighbourhood, as well as throughout South Wales.

He was born at York, and educated at Bootham School where his father was senior master. The earlier days of his scientific career were spent in the laboratory of his distinguished brother Sylvanus, at that time Lecturer on Physics in University College, Bristol. He also worked at Pharmacy under the late Mr. G F. Schacht. He soon, however, passed on to Edinburgh as a student of medicine, and he took his medical degrees there in 1885.

He was a talented draughtsman, and often made sketches in association with programmes for University functions, concert cards and menus. He did drawings for Professor Sims Woodhead in his book on *Practical Pathology*, and also

illustrated Dr. George Berry's handbook on *Diseases of the Eye*.

His early interest in eye diseases, and his exceptional delicacy of manipulation attracted the attention of Argyll-Robertson and his other teachers, and led to his election as Ophthalmic Surgeon to the Westminster Dispensary in Edinburgh.

In 1887 he was selected to fill the newly-created post of Ophthalmic Surgeon to the Cardiff Infirmary, and by his energy and talent he soon made a large Eye Department at the Institution, and so gained the confidence of the medical men in South Wales that he soon established a large private practice, and became a leading scientific opinion in his speciality.

He was a devoted worker in the best interests of the Cardiff Infirmary for twenty years, and his advice and skill were most highly appreciated throughout the district by rich and poor alike, for he was an accurate diagnostician, and an operator of exceptional delicacy. He was elected in turn to all the leading medical positions, and he was generally popular as a genial and gifted helper at social gatherings. He was a distinguished Freemason, and held many important offices in various orders of the Craft. He also did good service for the Territorial Army, and recently received a decoration from the King.

He made several important contributions to ophthalmic literature and practice.

He possessed an exceptional experience of Miners' Nystagmus, and read an important paper on this subject in 1890 at the Ophthalmological Society, which was followed by a speech by the late Simeon Snell of Sheffield, another authority on this matter.

These two also were early advocates of the use of the electro-magnet for removing iron fragments from the eyeball.

For some years Tatham Thompson suffered from poor health, his work was often done under painful conditions, somewhat straining a temper which was naturally most genial and merry; but he went bravely on until the malignant disease from which he suffered made it impossible for him to continue work, and he died after months of suffering on April 28th.

His professional brethren loved him, and held him in the very highest esteem; and the wide respect that he enjoyed from the public at large was shown by the number of those who attended or lined the route of his funeral.

We desire to express our sincere sympathy with his widow, a sister of a well-known Bristol student (Arthur Hill Joseph), and with his four young children.

ARTHUR JAMES MACDONALD BENTLEY, M.D., C.M.

We regret to learn of the sudden death from hemorrhage at Llandrindod Wells, on April 19th, at the age of 61, of Dr. Arthur Bentley, who gave a course of lectures on Tropical Diseases in the University of Bristol, 1910. He was formerly Colonial Surgeon at the Straits Settlements, and accordingly spent all his early medical life at Singapore, where he learnt much of tropical maladies. Recently his time was divided between Egypt, where he was well known as Physician to the Mina House Hotel at Cairo, and for the last few years at Llandrindod Wells in the summer months. He was appointed as lecturer in Tropical Diseases in the Universities of Manchester and Bristol, and was the author of several treatises on Beri-Beri, Elephantiasis and matters relating to health in Egypt and Llandrindod Wells.

Those who had the privilege of his friendship must feel that they have lost a genial companion, whose experience of life had been large, and from whom there was always much to be learnt. He wrote also the following contributions: "Elephantiasis, with Special Relation to Pathology of Lewis" (*Lancet*, 1878, i, 784), "On Warburg's Tincture" (*Gen. Remed. Tijds.-Ned. India*, 1874), and "Helouan as a Health Resort" (*The Health Resort*, 1905).

DR. E. M. GRACE.

It is with great regret we have to record the death of Dr. Edward Mills Grace, which took place on May 20th at Thornbury, after some months of failing health.

He was born at Downend on November 28th, 1841, the third son of Henry Mills Grace, a very hard-working country doctor, whose leisure moments in the summer were given up to cricket. The other sons were Henry, Alfred, now at Chipping Sodbury, W. G. and Fred. Henry and G. F., or Fred as everyone knew him, are dead. They were all cricketers, E. M., W. G. and G. F. coming under the public ken more than the others. They were all in the medical profession, and it is not too much to say that their name has been known to more people in the world than any of their medical *confrères* in the West of England. Coached by their father and their uncle, Alfred Pocock, in the orchard adjoining the Chestnuts, their home at Downend, with two or three dogs as fielders, by patient practice at the game, beginning early in their lives and early in the seasons, they built up for themselves a great reputation, and really did more to popularise the national game than any others.

It is not within the scope of this notice to speak of the cricket records and feats which the eldest of the trio, Dr. E. M., had to his name, but it is impossible not to refer to some of them. He began early, and we find that he played against an Eleven of All England in 1855 in a field at the back of the Full Moon Hotel, Bristol, when three of the All England Eleven played in top hats. From 1855 to 1910 he played every year, and probably made more runs in all matches and took more wickets than any other man has ever attained to or is ever likely to attain to. Up to the end of 1903 it has been calculated that his average was 1446 runs per season and 207 wickets. He went to Australia as one of George Parr's team in 1864, and was one of the foremost cricketers in first class matches, playing for Gloucestershire, England, and Gentlemen for the next twenty years. He was Secretary to the Gloucestershire County Club for forty years.

As regards his public life other than cricket, he qualified in 1865, and first practised at Marshfield. He came to Thornbury in October, 1867, and was Surgeon to the Workhouse, Parish Medical Officer and Public Vaccinator from 1867 to 1907. He was also Registrar of Births and Deaths, and Coroner for East Gloucestershire from 1875. He held many clubs—Post Office, Midland Railway, Rational Society, Oddfellows and others. He was Chairman of the first School Board, Chairman of the Parish Council and of the Parochial Sanitary Committee, and also the last Mayor of Thornbury, which office was abolished on the passing of the County Councils Bill. He took a great interest in politics, and was recently Chairman of the Thornbury District of the Thornbury Division of the Conservative Association, and also Chairman of the Tariff Reform League. He was a member of the Berkeley Hunt, and administrator of the Poultry Fund for many years.

He was a man of force and of striking personality. In whatever company he was he was always to the front, and having a boundless confidence in himself he invariably managed to get and to hold his own. Generous, hospitable and bubbling over with a cheery good nature, full of anecdote, with a large fund of adventures to tell the details of, he was a most interesting companion. Entering so largely into the public life of the county where he was so well known, and always having his say, he sometimes said and did things that many did not agree with; but he never nursed a grievance, and was as good friends with his opponents on the next occasion as if no cloud had ever passed between them. He was never afraid, not even of the Press, and in any altercation his pluck and his determination generally brought him the best of the argument. This characteristic pluck was innate, and was evident in his fearless riding to hounds even so lately as when he could not get into

the saddle without help, and also evident in his unique fielding close in at " point."

He was a remarkable man, and it will be many years before his words and deeds are forgotten.

He was married four times—in 1868, 1885, 1902 and 1907. There were thirteen children by the first wife, of whom six survive, and five by the second, of whom three survive.

Local Medical Notes.

University of Bristol.

EXAMINATION RESULTS.

M.B., B.C. CANTAB.—*Surgery:* P. A. Opie.

M.B., B.S. LOND.—*First Examination for Medical Degrees:* W. K. A. Richards. *Second Examination for Medical Degrees—Part I:* G. M. Jackson, Mary E. Joll, D. G. C. Tasker; *Part II:* C. C. Harrison, E. S. Sowerby, H. J. Orr-Ewing, L. Page, E. W. Wade, G. M. Campbell.

ROYAL COLLEGE OF PHYSICIANS.—F.R.C.P.—Dr. J. A. Nixon. M.R.C.P.—Capt. F. Percival Mackie, I.M.S., F.R.C.S.

Conjoint Board.—*Biology:* H. R. W. Husbands, D. Munro Smith. *Medicine:* L. C. W. Baker, R. F. Bolt.

M.R.C.S., L.R.C.P. LOND.—C. H. Hart, I. R. Hudlestone, T. S. Rippon.

L.D.S. ENG.—*Physics:* K. Batten, W. A. Culverwell. *Mechanical Dentistry:* G. H. Piercy. *Dental Metallurgy:* G. H. Piercy, S. V. Shrimpton, K. Batten. *Final—Part I:* E. J. Handford, P. L. Ealand, C. H. Wilson, B. L. Morgan; *Part II:* S. Saxton, A. H. Spencer Palmer, B. W. Tyson, L. G. Kinnersley.

ATHLETIC GROUND.—The new ground at Coombe Dingle was formally opened on May 11th, when the second annual sports took place. Favoured by splendid weather, a large gathering of students and others interested in the University witnessed some excellent sports, and the students of the medical faculty again secured the inter-faculty cup with a long lead of points over the other faculties. A pavilion is in course of erection, and the cost of this has been largely helped by the donor of the field, Mr. George A. Wills.

GUILD OF UNDERGRADUATES.—This scheme, which has been under consideration for some time, seems to be approaching completion. At present students need not necessarily join the present Clubs Union, but under the new scheme membership will be made compulsory, and aided by an annual grant from the Council of the University, the financial basis will be a more firm one that it is at present.

ASSOCIATION OF ALUMNI.—On April 25th the President and Committee of this Association entertained the members and their friends at the University, when an opportunity was given of viewing the Chemical and Physiological buildings and the equipment and general resources of these departments. They were received by the Vice-Chancellor, and a short lecture was delivered by Professor Francis. The proceedings were much enjoyed by a large gathering of alumni.

Research Defence Society.—A branch of this Society has been formed in Bristol, and the local secretary is Miss K. I. Williams, Llandaff House, Pembroke Vale, Clifton. A large addition to the roll of members is desired.

APPOINTMENTS.

University of Bristol.—H. W. Bywaters, D.Sc., has been appointed Demonstrator of Physiology.

Bristol Royal Infirmary.—*Senior Resident Officer:* H. Chitty, M.B., B.S. *House Surgeon:* E. W. Archer, L.M.S.S.A. *House Physicians:* S. H. Kingston, M.R.C.S., L.R.C.P., and J. S. Hopwood, M.R.C.S., L.R.C.P. *Resident Obstetric Officer:* R. S. S. Statham, M.B., Ch.B. Bristol, M.R.C.S., L.R.C.P. *House Surgeon to Ear, Throat and Nose Department:* R. C. Clarke, M.B., Ch.B. Bristol, M.R.C.S., L.R.C.P.

Bristol General Hospital.—*House Surgeon:* S. E. Malherbe, M.B., B.Ch. Edin. *House Physicians:* S. Marle, M.R.C.S., L.R.C.P., and H. A. Cookson, M.B., B.Ch. Edin. *Casualty House Surgeon:* F. H. Pickin, M.R.C.S., L.R.C.P.

Children's Hospital, Bristol.—Arthur Fells, M.B., C.M. Edin., has been appointed Assistant-Surgeon.